SOCIAL IMPLICATIONS OF TECHNOLOGICAL CHANGES IN RURAL KASHMIR

(A Comparative Study of Two Villages of Anantnag District in Kashmir)

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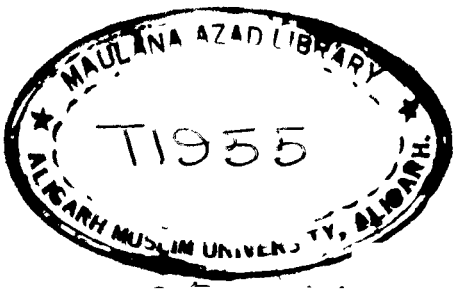
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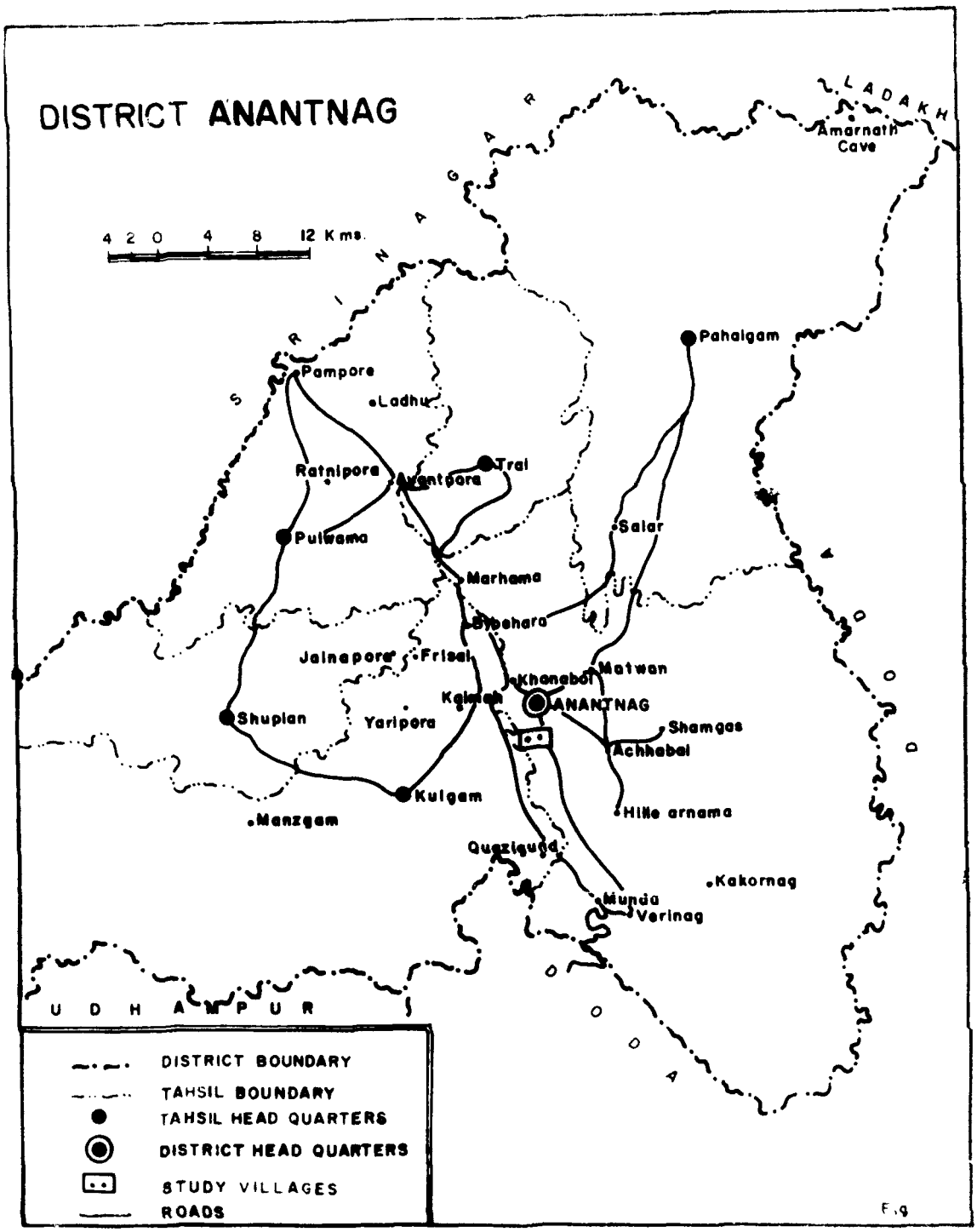
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JUNE, 1978 (Mohd. Aslam)

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INTRODUCTION

India after attaining political freedom turned to improve economic, social and cultural aspects of national life. Scientific and technological advancement played an important role in this regard. It generally happens that changes in social values, institutions and ideology lag behind changes in material technology. It seems fairly easy to induce people to substitute a better implement for the old but it is difficult to get them to change their thoughts and habits, their institutions and beliefs, their values and attitudes.

India as a developing country faced this type of dilemma and in its anxiety to move rapidly from an archaic to a modern economic and social system, endeavoured to compress into a few decades, a complex inter-related set of fundamental changes, which took place gradually over several centuries in the countries of early industrialisation. This implies that developing countries like India were required to undertake a highly co-ordinated and planned approach to stimulate social and economic regeneration.

India being predominently the country of villages could not conceive of any co-ordinated planned approach without developing the villages. These villages had remained in a state of backwardness for centuries, where people had been

living at barely the subsistence level. Due to the lack of implements, conventional methods in agriculture and inadequate resources, agricultural production had continued to be miserably low. There was lack of capital resources for investment and a very low rate of capital formation. The villages were ignorant of the advantages of science and technology nor were they possessing the resources for their utilization. At the same time, due to the prevalence of illiteracy, the village India was steeped in superstitions. Certain attitudes and values due to religion served as a hurdle in the way of material development and economic growth. There had been apathy and resignation in accepting the new conditions.

Thus in the post independence era, conscious efforts were made in practical implementation of the provisions laid down in the Constitution of India for economic and social development of the villages. Consequently India embarked upon a huge programme of rural development and welfare with an thrust on modernization of agricultural technologies in order to ameliorate the conditions of the rural poor. At the same time agricultural researches obviously reached the stage where none could possibly underestimate the immense potentiality that science and technology possess and in the exploitation of which lies the solution of the manifold problems of the teeming millions.

In the field of agriculture the more important technology includes improved variety of seeds, use of chemical fertilizer, kind of materials used for protection of crops against pests and diseases, and new designs of mechanical equipment. Although a single major input seldom substitutes for another single input, technological innovations in agriculture have been classified broadly as:

i) relatively labour saving (tractor, modern plough, threshing machines, etc.,); or

ii) relatively land saving (fertilizer, high yielding variety of seeds, etc.).

It has been asserted that whenever modernity enters the village and the new tools and techniques are introduced, the standard of living of the people has generally been raised. Once this phenomena is understood by the villagers, they themselves become eager to improve their lot. They become creators of ideas and innovations and paves the road to progress.[1] At the same time, it has also been asserted that technology always proves to affect a many faceted stimulus to changing society.[2] Social interaction in rural areas falls logically into three categories, relation of people to land; relation of person to person, and the institutional aspects.[3] These three categories provide, as Bertrand[4] mentions, an appropriate organizational frame of reference for the

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a number of resistances. These resistances generally emerge from the social system.

Therefore agricultural innovations that are recommended must not only be considered in terms of its expected productivity but also in terms of its impact on the social system in which it has to flourish.

The dearth of studies which could have taken primary cognizance of the social effects of modern agricultural technology, the ultimate impact of innovation -- on the farm and in the home -- on the customs, beliefs, traditions and on social institutions, pressed the demand to study the adoption and diffusion of modern agricultural technology in relation to its social implications. The need was more acute for the State of Jammu and Kashmir, which is devoid of such studies. It is surprising to note that there is not a single adoption study available for the State.

The present study on "social implications of technological change in rural Kashmir" is an effort in this direction. The study strives to achieve the following objectives:

1) To find out the socio-economic background of the rural people and to ascertain its association with other variables, if any.

ii) The extent to which rural people adopted the new techniques of agriculture.

iii) To find out the causes that lead rural people to adopt these techniques and to identify the barriers to adoption.

iv) To find out the important channels of communication for adoption of new agricultural techniques.

v) To find out the role of change agents in relation to adoption.

vi) To determine the impact of adoption of new agricultural techniques on the social institutions and on the behaviour of the people.

Against this background of objectives, which are not merely material, but also include non-material implications, the present study was conceived and formulated. The present study is not merely the assessment of technological development in the agricultural field, but goes further to find out what impact the technological changes brought about by technological development in agriculture are having on the minds of the men and on the state of community, judged in terms of, what is mentioned elsewhere, 'human objectives of technological development'.

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5. Parsons, Talcot: 'Social System'. Glencoe, Free Press, 1961.

INTRODUCTION

Sociology has made gratifying progress during recent years in developing sharper methodological tools, in refining its theoretical concepts and in developing certain sub-fields. A wide range of subjects were covered with increasing thoroughness. At the same time, some degree of attention was not paid in some directions. In this context much attention was not paid to the enormous impact of science and technology upon society in general and human behaviour in particular. It is science and technology which vitally affects human behaviour, by inducing an all-pervasive flow of change in all spheres of human life resulting in a persistant all round transformation of the social environment. There are other forces also operating towards the phenomena of change but the accumulation of technology constitutes a dominant and crucial force in changing the social environment. The other factors viz. migration and other forms of population change, social movements and other types of collective behaviour, change in natural resources, the development of new ideologies and other social influences, all seem to be rooted in the technological factor.

Technology is the potential factor of social change in a society. India being predominantly an agricultural country, our planners laid emphasis on agricultural

technology in the programmes of planned changes. The technology of rural society according to 'Bertrand'[1], includes its techniques, its tools, its outlook, and its materials for manipulating the physical world'. According to Bertrand, it is of three main kinds related to three aspects of rural economy. The first is the techonology of crops and livestock. The second is the technology of preparation of food and other articles for consumption and the third is technology of transport and communication. These three kinds of technology are related with the three important aspects of rural life. The first involves the techniques and methods of farming, the second centres in the household and the third applies to the movement of material, equipment or people and to contact between peoples'. These broader categories of agricultural technology, related to three aspects of rural life are instrumental and serve as a 'catalytic agent' in bringing about changes in rural society.

As far as the impact of agricultural technology on the behaviour of the rural people is concerned, many factors are involved. In most instances, it is not possible to segregate the specific influences of any individual factor. The fact is that at present all factors work towards the increasing use of technology

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1. Bertrand, A.L. "Rural Sociology", New York, McGraw Co. Inc. 1958.

which is significantly related not only to rural economy but to the social behaviour of rural people also. When people accept and use new innovations, discoveries and inventions, social behaviour is inevitably affected to a greater or lesser degree. It entirely depends upon the peoples attitude to adopt and accomodate the new changes. More often different sorts of resistances are faced in the way of social change. Sometimes people do not accept the new innovations, techniques and new changes because of their orientation towards existing and traditional patterns. Sometimes societies face the resistance due to the fact that the people are not exposed to mass media and they are still ignorant about new ways and techniques.

Apart from these factors, when changes are introduced in a society, they create a sort of crises in the existing pattern, which makes people somewhat reluctant to adopt new changes. Thus a number of factors and social problems are involved in the adoption and accomodation of new changes in a society.

Many villages in India which are thus exposed to the forces of change are thereby subject to the impact of these forces, vary in pace and extent of social change. In the same way introduction of new farming techniques which is a technological change is also highly influenced by social, cultural and geographical conditions.

Rural Kashmir which differs from the rest of rural India because of its unique geographical conditions has been a neglected area till now for any type of sociological study. Agriculture is the mainstay of the people of the State and any purposeful planning for progress should aim at securing a break-through in this sector. Underscoring the cordial importance of agriculture in the economy of the State, it is basically the agricultural sector which has to be made capable enough to absorb the large number of unemployed and underemployed manpower. With this object in view modernization of this sector has received special attention in recent thinking. These new trends tend to bring innovations in the shape of new agricultural technology in order to modernize the whole traditional pattern of rural society. The present study is an effort in this direction. The purpose of the present study is to understand the adoption of modern technologies in bringing about changes in social life of the people in rural Kashmir.

Inspite of number of studies in the recent past, it could be said without much hesitation that there is not a little scientific material available about social change in rural Kashmir. The villages have been taken for granted to such an extent that only few written descriptions of village life exist. One of the reasons

for non-availability of studies for this part of rural India is dearth of basic material on which to develop hypothesis and theories.

This created a need a to study the social life of this isolated setting of rural India. The objectives of the study has been already mentioned in the previous chapter.

On the basis of the objectives set for this study, following general hypothesis was derived: "Greater the dissemination of technology, higher the scope for social change and vice-versa.".

It seems necessary to mention that it is not an attempt to evaluate the efficiency of operation, or to measure the increase in food production resulting from the use of modern technology but the present study is concerned to examine as to how far adoption of modern agricultural technology has brought about changes in the social life of farmers.

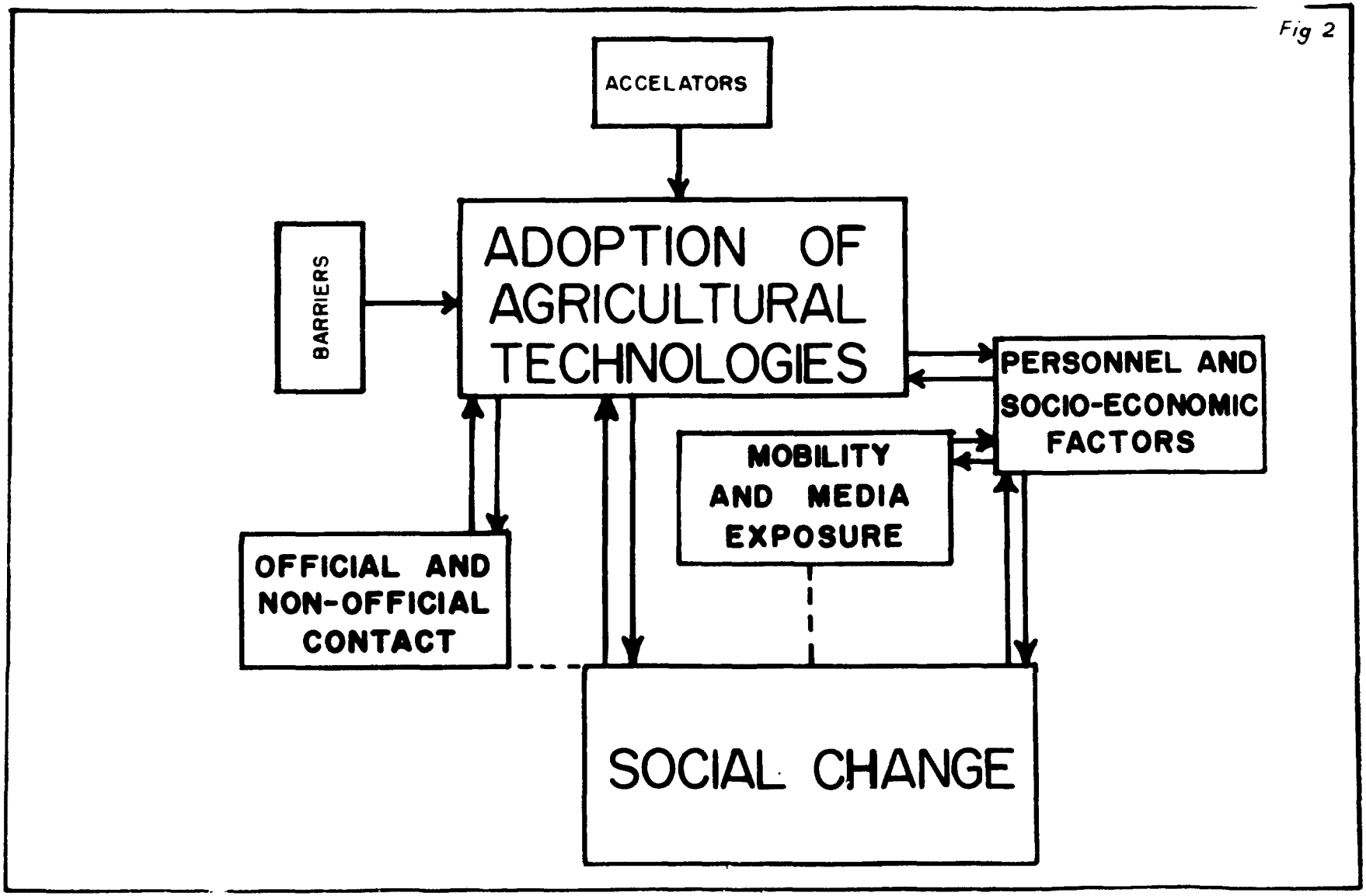
In order to specify in somewhat greater detail the areas of content with which this study is concerned, a theoretical model (Fig. 2) was conceived which is discussed as under:

The adoption of new agricultural technologies has been found to be influenced by the personal and socio-economic factors like, age, education, income, size of land holdings, etc. (Sachchidananda, 1972), Singh and Sahay (1972)). On the other hand the adoption of new technology in agriculture leads to the increase in production thereby raising the economic level of the people. In other words, the adoption is not only influenced by the personal and socio-economic factors but it also affects these factors in turn. Hence, the relationship between the adoption of agricultural technology and the personal and socio-economic factors is vise-versa.

The personal and socio-economic factors like age, education, income, size of holding, etc. have their influence on the attitudes and values of the person. For instance, higher the education or higher the income, more modern the person is expected to be (Rivlin, L.G. and others, 1971, Sachchidananda, 1972). But at the same time as the attitudes of the person change it leads to influence on his education and income. Thus the relationship between the personal and socio-economic factors and the attitudes and values is also vice-versa.

Sachchidananda (1972) and Singh and Sahay (1972) observed that adoption of new agricultural technology leads to the changes in social aspects i.e. in the attitudes and values of the farmers. At the same time the change in the

Fig 2


ACCELATORS
BARRIERS
ADOPTION OF AGRICULTURAL TECHNOLOGIES
PERSONNEL AND SOCIO-ECONOMIC FACTORS
MOBILITY AND MEDIA EXPOSURE
OFFICIAL AND NON-OFFICIAL CONTACT
SOCIAL CHANGE

attitudes and values of the farmers influence the adoption of agricultural technology (Rivlin, J.J. et.al. 1971). Hence, the relation between the adoption and the social aspects is also assumed as mutually reciprocal.

It also seems necessary to differentiate between socio-economic factors and other set of intervening variables such as media exposure and mobility, which are vitally related to technological change. It is important to understand how diffusion and adoption of technology is influenced by mass media, mobility and official and non-official contact (Singh and Sahay, 1972).

The other factors which necessitate study, along with these mentioned, are associated with the technology itself, which lead to acceptance or rejection of the innovations (Jaiswal, N.K. & Arya, P.P., 1974).

The adoption of agricultural innovation is thus inter-related with socio-economic factors as well as changes in attitudes. At the same time, socio-economic factors are inter-related with change in attitudes. Mobility and mass media is inter-related with adoption as well as socio-economic correlates and so on.

In this study an attempt is made to postulate a theoretical model to examine the interrelationship between the various elements of technological development and social change to justify the main hypothesis of this study.

REVIEW OF LITERATURE

Number of studies have been conducted by Indian as well as foreign Sociologists to depict the static as well as the dynamic aspects of social life in Indian villages. Prof.Dube made the following remarks in his address at the beginning of 1958:

"Our studies are often modelled on similar studies done elsewhere in the world and lack in a coherent frame of reference relevant to the structure and organisation of Indian society. While our descriptive categories are satisfactory, our analytical categories have much to be desired. On the whole, the organisation of such research on a countrywide basis lacks planning and we have not evinced enough interest in evolving or rigidly defining the criteria on which we select villages for community study --- We can explain our position by suggesting that initial efforts in any new direction are necessarily exploratory in nature or by emphasizing that our need for fact is so great that any type of study should be welcome."[1]

There is no uniformity of details in the picture of Indian villages that emerged as a result of emperical studies conducted in different regions of the country, although the overall picture may tend to fall into a pattern. Village Kashmir might also conform to this pattern in its

broad outlines. It was desired to study the picture of Kashmir villages and the changes that are taking place since a period of time. A review of the studies, conducted by Indian as well as foreign scholars, appears appropriate at this stage. The review fall into three categories:

i) Descriptive village studies;
ii) Studies in the adoption and diffusion of agricultural innovations; and
iii) Studies depicting the changing aspects of social life in Indian villages.

i) Descriptive Village Studies

Wiser (1937)[2] makes a survey of the social, religious and economic family life of a north Indian village in which various phases of life of the people are described. He describes the life of the villagers, of the family, of the younger generation and of the 'agents of authority'. At the end Wiser records the conversations of the villagers explains their behaviour and attitudes; which reflects villagers' feelings that change is necessary but not at the cost of destruction of old tradition.

Another commendable effort was made by Dube (1955)[3] in his study 'Indian village'. The purpose in the words of the author was '.... to give a clear and intimate picture of some aspects of life in one Indian village.'[4] He gave descriptions of social structure,

economic structure, ritual structure, 'The Web of family Ties', levels of living and living together, of the villagers. Apart from this intra-personal relations and attitudes were also well discussed. The village has been accepted as a social unit which has its own structure with definite patterns of inter-relationship of its members.

Marriot's et.al. (1955)[5] 'Village India - studies in the little community', is a collection of eight studies, spread over different parts of the country. The purpose according to author was to make an effort to understand any great civilization and its enormously complex changes, through anthropological studies.[6] "There are different opinions expressed in these studies. Some treat villages almost an isolate, elsewhere, because of radical changes taking place in the village, it is assured that villages cease to be a significant unit of investigation. One study discusses the formation of personality within a social structure, while another discusses urban life and its effects on the village. Two are concerned with comparisons, one with tribal group and the village group and other with village of Mexico and of India. The collection as a whole is an attempt to analyse as to how far 'holistic methods of analysis for studies of villages in India are relevant'. After studying the different processes which are in operation in the village, the

general feeling is that there are two types of forces, viz. internal and external and their study facilitates understanding the village community.

These forces were studied by Dube (1958)[7] in India's changing villages which is an attempt to identify important human factors involved when external forces are in uced in a society for bringing about change. The social structure is not discussed in detail but motivational factors which lead people to accept the changes are clearly identified.

Lewis (1958)[8] in his study 'Village life in North India' which is an exploratory study of a village near Delhi attempted to achieve the following objectives: "(i) To demonstrate the relevancy of the intimate understanding of village life and organisation for the work of community development workers; (ii) to obtain significant base line data in a village within a community project area prior to start of action programme so that the impact of the action may be studied; (iii) to develop some research papers which would project modern field work technique in cultural anthropology and sociology."[9]

The major contribution of the study to the understanding of the social structure of a village community is the introduction of the 'concept of factions' about which Karl Taylor remarks, "the greatest contribution of Lewis to an understanding of the social structure or system of human

relationship within which the residents of Rampur village live and work, is the clear delineation of two dimensions of social structure other than the village as a whole 'factions' which have over a smaller-than-caste social dimension. ..."[10]

Apart from the studies reviewed above, there are a number of studies which directly or indirectly throw light on the understanding of the social structure of Indian village community.

ii) Studies in the Adoption and Diffusion of Agricultural Innovations

Number of studies have been made in India and abroad in the adoption and diffusion of agricultural innovations. The research work in this field was given a start as early as 1927 (Wilson)[11]. But the early researches concerned themselves to discover the relationship of extension method to results obtained in the adoption of farm practices. Very little attention was paid to clarify the concept of 'adoption' as such.

It was in 1942 when Hoffer,[12] studied acceptance of approved farm practices among farmers of Dutch descent. He observed, "In fact, the adoption of improved practices could be considered as the acceptance of cultural trait on the part of the grower."

The study of Ryan and Gross (1943)[13] on the acceptance and diffusion of hybrid seed corn is most widely known as amongst the earliest research work done in the field of adoption. One of the important findings of this study is that adoption of a new idea proceeds in stages, as awareness, trail and adoption.

Number of studies were conducted afterwards in order to explain the term 'adoption' besides locating the factors associated with adoption. Willmire (1952)[14] who shaped the concept of adoption in his study of improved farm practices stated "Acceptance is defined to include both approval of a practice as well as its adoption. Adoption is of two types - trial and full adoption. ... This process may occur over a period of few days, or weeks or over a period of years." But in 1953, in his next study on adoption of improved farm practices as related tofamily factors, Willmire,[15] reshaped his earlier version of adoption as "... a process composed of learning, deciding and acting over a period of time. The adoption of a specific practice is not the result of a single decision to act but of a series of actions and thought decisions." He considered this process composed of four stages, viz. awareness, obtaining information; conviction and trail; and adoption.

Wassinger (1959)[16] defined adoption as 'stage of acceptance leading to continued use.". Commenting on the stages of the adoption process Lionberger (1960)[17] quoted Wassinger and remarked that, "these of course, do not necessarily represent discrete or distrietly separate stage in the individual adoption process, nor is it implied that they are universally followed by all people in all of the decisions they make, or that these are the most appropriate stages to use. What these stages do represent is a useful way of describing a relatively continuous sequence of actions, events and influences that intervene between initial knowledge about the idea, product or practice and actual adoption of it."

Thus early research on the diffusion of technological innovations in agriculture implicitly emphasised on optional adoption process, where adoption of an innovation is conceptualized as a purely individual decision (Rogers 1962)[18]. As a result attempts were primarily directed towards identifying individual characteristics related to innovation adoption.

Studies conducted in different parts of the country as well as abroad on this subject have brought to light several factors which in various interacting fashions affect the adoption of improved practices and either promote or retard their rate and extent. It will be useful to recount here the results of some of these studies.

Farm Size

The studies of Millioning (1954)[19], Lienberger and Hagenour (1957)[20] reveal that size of farm is positively related with the adoption of improved practices. The study of Sinha (1963)[21] also arrived at the same conclusion.

Further, National Council of Applied Economic Research (1964)[22] conducted a wide survey to study the factors effecting fertilizer consumption. Findings of this study reveal that the fertilizer user on an average, holds a much larger farm than the non-user.

Rose and Nabsena (1965)[23] in their study on "The Diffusion of Innovation in a Village of Western Maharashtra" found that adoption of improved practices was related to the size of the holding and was more common among agricultural castes than among other castes.

The study of Nachiappan and (1972)[24] reveals that "with the increase in the size of holding, the adoption index also goes up. But the rise in the adoption index begins to fall as soon the holding reaches a particular level.[25]

Income

The relationship between income and adoption of agricultural innovations is generally reported to be positive. Nigel (1960)[26], who compared two income groups found that the low income respondents had adopted fewer of the practices compared to those who had high income.

Bose and Vishnoi (1960)[27] concluded that the economic condition always plays a dominant role in the acceptance of innovations.

Age

Sachchidananda (1972)[28] reports that level of adoption to a large extent depends upon the age of the head of the household, the person who takes a decision in these matters. He further reports that in three blocks taken together in the study, the youngest age group leads in adoption. In one block, however, it is the middle aged farmers who lead.

Education

Das Gupta (1963)[29] reported that the categories of farmers differ in such variables as socio-economic status, education, outside contact, land ownership, etc. The innovators score high in all these variables. Such persons have high level of education and more outside contact. Thereby they develop a broadcoutlook which makes them change oriented.

Findings of the study conducted by the National Council of Applied Economic Research (1964)[30] in seven states of India, also reported that farmers with some education (primary and above) were high level users of fertilizers than illiterate farmers. This is supported by Sachchidananda (1972)[31] which shows a positive co-relation between the

education and adoption. The study revealed that highest adoption index was for persons who have received education upto the matriculation level.

Family

Rogers and Beal (1958)[32] observed that family members often serve as referent or consultants in decision making to adopt new farm and home practices.

Krause (1960)[33] in his study on family role differentiation and technological change in farming reported that the wife's cooperativeness was an important factor influencing the adoption of the farm innovations. In contrast to this Munsre and Mahajan (1962)[34] in their study on influence of family members on decision making in farm operations found that the farmers who took decision themselves, had adopted more practices than those whose decision was influenced by their family.

Sinha (1963)[35] reports that family size was significantly related with each stage of adoption process. Sachdeva Ananda (1972)[36] reports that a moderately large size family finds it easier to adopt innovations, because of its total dependence on agriculture and also availability of large number of persons for different aspects of agricultural work.

Occupation

Sachchidanands (1972)[37] reports that the farm and service occupational category leads in adoption of innovations and the exclusive farmers though ranking next, are still far behind. The obvious reason for this is the financial backing given by service as also knowledge, know-how and influence who go with it.

Socio-Economic Status

Socio-economic status has been known to influence individual behaviour in different walks of life. The I.V.S. Study (1971)[38] reports that higher status farmers are quicker to adopt modern practices. The reasons given partly are that the change agents like the Agriculture Extension supervisor and the Village Level Worker work more closely with them.

Sachchidananda (1972)[39] also reports that there is a strong relationship between the two. The higher the socio-economic score the higher will be the adoption index.

Information Source

Number of studies have been conducted on the flow of technical information in general and agro-information in particular. Here the results of some of them will be high-lighted.

Wibbening (1956)[40] postulated that various information sources are used to obtain different types of information. Mass media are used primarily as a source of 'first knowledge' about agricultural innovations. Agricultural agencies are used to obtain the detailed instructions for putting the practice into effect as well as help in decision-making. Other farmers (neighbours, relatives, etc.) help in decision-making.

Rogers (1950)[41] reports that mass media were generally the most important in creating awareness of new ideas but personal influence from neighbours and friends was regarded as most effective in convincing farmers to actually try out the new idea.

Mahudkar (1958)[42] found that neighbour to neighbour communication was of greater importance in the diffusion of farm innovations than any other communication channel.

Rogers (1962)[43] after reviewing many studies on sources of information by stages made a generalisation that impersonal information sources were most important at awareness stage, and personal sources were most important at the evaluation stage in the adoption process.

Sinha and Prasad (1966)[44] reported that radio was the most important source of information at awareness

stage in case of wheat variety C.273. Next to radio, neighbours were the most important source of information to 22.67 per cent of the farmers. They further stated that neighbours were the most important single source of providing 'first information' about hybrid maize and chemical fertilizers.

Rao and Moulik (1966)[45] stated that more farmers heard first about nitrogenous fertilizers through extension agencies, community sources and extension teaching aids in their order of usage.

Report of the Indian Institute of Mass Communication (1968) on agro-information flow at the village level stated that V.L.W's, neighbours and relations of the farmers were the first source of information for nearly 40 percent of the sample and radio for nearly 4 percent of the sample.

Singh and Sahay (1972)[46] reported in their comparative study of the two villages, that personal cosmopolite sources (communication with extension agents, farm supply-store personnel, farmers from other neighbourhood, etc.) and mass media provided the first source of information in the progressive village, while few cosmopolite and more personal localite sources (communication with friends, relatives, neighbours and village

leaders, etc.) provided information to the majority of the farmers in the non-progressive village.

Accelerators and Barriers

A number of studies have been conducted in the area of adoption of innovations and to identify the accelerators and barriers in the process of adoption.

Dube (1958)[47] in the study, "India's Changing Villages" identifies the motivational factors which led people to accept the changes. Factors which help in accepting the new innovations are identified as:(1) Economic advantage and convenience, (2) Prestige of the individual family, kin-group, caste and village, (3) Novelty of the innovations, (4) Compliance to the wishes of the Government and village leaders. The barriers are identified as: (1) apathy of the people, (2) suspicion and distrust, (3) lack of effective and adequate media of communication, (4) traditional and cultural factors.

Wilkening et.al.[48] indicated that adoption of improved practices are determined by the farmers perception of its consequences. Further, adoption of one practice leads a farmer to invest his money in others also. For example, introduction of heavy plough required strong draft power which may not be available with the farmers.[49]

Rogers (1962)[50] reports that complexity of farm innovation was more highly related (in negative direction) to their rate of adoption than any other characteristics of the innovation. This is supported by Singh (1973)[51] who reported that the Japanese method of paddy cultivation was full of complex procedures from its seed preparation to its harvest with the result, the adoption of this practice was rather limited.

A single combined study conducted in Delhi villages revealed the thematic factors viz., high initial cost, high labour requirement and lack of perception of profitability, non-compatibility with existing method of cultivation and values and norms of the social system were important factors related to low level of adoption of improved farm practices (Jaiswal, 1965)[52].

Several studies have indicated that the inadequate knowledge of extension agents serves as a barrier to the adoption of improved practices. Sen (1969)[53], Pistiah (1974)[54] and Singh (1972)[55] report that existing V.L.W's are considered as 'outdated' in the present era of sophisticated modern agricultural technology. Supporting this, Singh (1973)[56] states that the outdated technology in which they are highly experienced has no relevance with new agriculture either in theory or in practice.

Lack of co-ordination between the various sources and agencies to supply to respective inputs in proper quantity at a proper time has been reported by several studies. Singh (1973)[57] reports lack of co-ordination between the Agriculture Information Bureau, Community Development Department and the extension education divisions of Agricultural Universities. Aslam (1975)[58] arrived at the same type of conclusion. He reports that lack of coordination between the different extension agents not only stands as a barrier but there is also a wasteful expenditure on duplicated efforts.

Some studies revealed that ecological factors also came in the way of adoption and diffusion of modern agricultural practices. Singh (1973)[59] reports that 'Ecological factors determine what types of production and which species can thrive in the light of existing climatic, soil and biological conditions. Due to this reason innovations suitable for one region are found completely useless for the other regions.

Rogers and Havens (1961)[60] reports that the farmers knowledge of fertilizers acted as an important intervening variable between their attitudes and use of fertilizers. They also observed a significantly positive

Wibbening (1956)[40] postulated that various information sources are used to obtain different types of information. Mass media are used primarily as a source of 'first knowledge' about agricultural innovations. Agricultural agencies are used to obtain the detailed instructions for putting the practice into effect as well as help in decision-making. Other farmers (neighbours, relatives, etc.) help in decision-making.

Rogers (1950)[41] reports that mass media were generally the most important in creating awareness of new ideas but personal influence from neighbours and friends was regarded as most effective in convincing farmers to actually try out the new idea.

Rahudkar (1958)[42] found that neighbour to neighbour communication was of greater importance in the diffusion of farm innovations than any other communication channel.

Rogers (1962)[43] after reviewing many studies on sources of information by stages made a generalization that impersonal information sources were most important at awareness stage, and personal sources were most important at the evaluation stage in the adoption process.

Sinha and Prasad (1966)[44] reported that radio was the most important source of information at awareness

association between adoption of a farm practice score and attitude towards the practice.

The above review put forth the diversified set of factors responsible for accelerating or retarding the adoption of agricultural innovation. They do not act independently, but they interact with each other as Jaiswal (1965)[61] reports that 'the thematic factors, the factors related to extension agency, and the micro and macro-level factors related to farmers do not act independently, but, they interact with each other forming a barrier-complex leading to low level of adoption of improved practices in the farming community.'. Jaiswal and Arya (1974)[62] arrive at the conclusion that the piecemeal approaches to study the factors responsible for transfer of technology and adoption are not adequate and a more comprehensive study in this field is needed, in which the process of transfer of technology and adoption can be studied in its totality. The present study apart from identifying the social implications, is an effort to study the process of adoption in its totality.

iii) Studies Depicting the Changing Aspects of Social Life in Indian Villages.

Number of studies have been conducted by foreign and Indian scholars dealing with dynamic aspects of rural life and to identify the factors facilitating this dynamism.

Dube (1955)[63] reports on the mechanism of the process of social change in an Indian village. The factors of utility, convenience and availability have played a more important role in bringing several new elements into the life of the community. He pointed out that under the impact of the new socio-economic factors, the family ties have weakened, the kingroup has lost some of its characteristics strength and in the system of status evaluation, achieved status is competing with traditionally ascribed status.

Some studies in the composition of the family in different villages reveal that the joint family has been shrinking in size in the entire country including the villages. This is supported by census reports from decade to decade. At the same time we have varying accounts about the composition of the family in rural India.

Rao (1957)[64] observed that as a result of industrialization, better education facilities, increasing outside contact etc., the way of life of the people have changed to a great extent. He reports that the emergence of the nuclear family as, a functional unit of the present day 'Malabar' society with the recognition of bilateral kinship ties, and with husband and

wife as the active partners in running the family, has become a novel conception among the people. He fruther mentions that the new innovations of radio, cinema, etc. have revolutionized the leisure time activities and have occupied a prominent place in the changed social order.

Nicholas (1961)[65] in the study of 'Economics of family types in the Bengali villages' reports that families predominantly are of the nucluer type. This is supported by T.N.Madan (1965)[66] who reports that joint family does not form a high proportion among the Brahmins of rural Kashmir. While Pulkarni (1960)[67] reports that there is predominance of joint family. It seems what Hiramani (1977)[68] calls it, that the studies are inadequate in yielding any generalisation.or they have sidetracked the main factors connected with or are casual to the different types of family.

There are some studies where attempt has been made to relate family types with family income and education. Morrison's (1959)[69] study of Badlapur and Driver's (1959)[70] study of 'Family structure and socioeconomic status' indicate that the highest and the lowest income groups show the predominance of nucleur families and that the highly educated also have preference for nucluer families.

Introduction of modern agricultural technology has brought about changes in the relationship of people to the land. 'The important relationship between the population and the land center about the nature of the property rights, the distribution of ownership and control of land, and systems of land division and settlement patterns.'[71] Bertrand et.al. (1958)[72] reports that technology has brought about changes in all these relations. However it is in the first and second of these that most of the change in rural social organization appears to have occured. In the distribution, ownership and control of the land, several significant changes can be traced directly to the influence of technology. He further mentioned that with regard to economics, it has been found that the level of living of farm families is closely related to their command of technology."[73]

As a result of the impact of technology, the farm family shows evidence of change from its traditional structure towards that of urban family. This includes a trend towards medium size (large families are less common), less stability and a shift from paternalistic authority to equilitarianism among other things.[74] Farm people in mechanized areas have increased their social activities, more than those in areas where technology had less impact.

Research reports indicate that mechanization is associated with more participation in such things as school, recreational activities, and civil programmes, etc.[75]

Singh (1972)[76] reports that joint family is gradually disintegrating due to the changes in their economic conditions. The growing economy is taking them towards individualism.

He further mentions that study on some aspects of marriage reveals that changes have taken place with regard to: age of marriage; role of boys in their marriage, dowry system, distance of marriage, and ritualistic and ceremonial performances. In both the villages, which he studied, the age of marriage, rate of dowry and distance of marriage have increased, whereas expenditure on ritualistic and ceremonial performances has reduced due to the increase in the rate of dowry and understanding on the part of the farmers as wasteful expenditure. Besides, the boys are playing important role in their marriage negotiations.[77]

Gupta (1974)[78] mentioned that the new flow of information has enabled families whose kin ties were highly concentrated in the village to enlarge their kin circles. Thus, opening up fresh areas with new ideas ...

education is now valued as a profound and potential tool for prosperity.

Aggarwal (1977)[79] in his study on 'some social aspects of the Green Revolution in Ludhiana, Punjab', observes that the old social institutions were undergoing rapid change as peasants were transformed in to farmers by the process of Green Revolution.[80]

He further pointed out that farmers are more integrated with the larger society, more market oriented, and was modern technology. The transformation of peasants in to farmers has resulted in certain drastic changes in rural society. He identifies these changes in the form of (i) disappearance of untouchability; (ii) Sepi system (analogous to the jajmani system) is on its way out; (iii) improvement in the status of middle level castes; (iv) decline in the power of Jats as a result of introduction of panchayat system, and (v) change in joint family system.[81]

It seems that, 'if mechanization of agriculture or use of new variety of seeds or fertilizer brings prosperity to villages, community would like to change its eating habits and there will be a great demand for educational opportunities followed by distinct changes in living conditions and levels of aspiration.[82]

These types of institutional changes seem to be necessary as 'Yogindra Singh' (1973)[83] also contends. Institutional changes are necessary for coordinating modernizing trends in the other structural conditions of a society.[84] At the same time, social change is giving rise to a desire for greater autonomy, shared family roles, rejection of any authority, which does not grow out of the needs of the situation and so on.

The efforts made in the aforesaid studies are concerned with the social change as a result of other factors including the agricultural technologies. In the present study an attempt has been made to study the impact of adoption of modern agricultural technologies on the social life of the farming community.

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* Original not seen.

CHAPTER IV

RESEARCH DESIGN

Area of Study

The objective of the present study is to examine and explain variations in the adoption pattern of the farmers and the subsequent social implications. The coverage of the present study is limited to two villages of Larikpora block of Anantnag district. While selecting the area the main focus was to choose an area in which adoption of recommended practices were progressing well and where the specific practices in terms of adoption of improved implements, chemical fertilizers, insecticides and pesticides and possession of improved livestock, which are recommended to the farmers are clearly identified. This was found out by consulting the local developmental officials.

Multi-stage purposive random sampling technique was used to select the samples for this study. At the first stage of sampling, district and blocks were selected and at the second stage, selection of villages was done. Kashmir valley comprises of three districts (Anantnag, Baramullah and Srinagar). Out of these, one (Anantnag) was selected in consultation with the Deputy Commissioner,

Development, Kashmir Province keeping in view the extent of adoption of agricultural technologies.* It was suggested by him that in Anantnag district the specific practices recommended to the farmers are clearly identified.

Selection of the Block

In consultation with District Agriculture Officer, the Block Larikpara was selected. Firstly, a list of the progressive blocks was prepared and then based on the above criteria, it was agreed upon that Block Larikpora, is making a concentrated efforts to introduce agricultural technologies. Further it was suggested that this Block is having both types of villages, progressive and less progressive.

Selection of the Villages

While selecting the two villages from the above noted Block, the District Agricultural Officer, Block Development Officer and Agricultural Extension

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* During the discussion with Deputy Commissioner, Development, it was agreed upon that Baramulla district is more oriented towards horticulture and Srinagar District comprises more urban areas. Anantnag is the only district where the specific practices recommended to the farmers are comparatively clearly identified. This district was also under Crash Programme in 1967.

Officer were consulted. Since it was decided that sample should represent the universe, the size of the village (preferably medium) was also kept in view.

It was desired to study the adoption situation in two villages (one progressive and one non-progressive) which had similarity in most aspects in order to eliminate as many variables as possible (different V.L.W's, different Extension specialists, etc.). After all considerations a progressive village Dyalagam and a less progressive village Kamar was selected. The villages selected were three miles apart, were served by the same V.L.W. and extension specialists, had similar type of soil but had widely divergent rates of adoption of the recommended practices. This was done to have a comparative picture of two villages in order to have a clear understanding of adoption of improved agricultural practices and its impact on the social life of the farming community.

Selection of Respondents

Since the main focus of the study was to understand the impact of technological changes in agriculture, it was considered essential to select such respondents who are directly or indirectly associated with farming. A list containing the number of house-

holds associated with farming was prepared with help from the village level worker. The list in the records being outdated had to be verified and corrected. Finally, 100 families from each village were selected by simple random sampling and functional head of the family was treated as the respondent for this study. The sample features of the two villages are shown in Tables 1-8 in the Appendix

Tools and Techniques

Both primary and secondary sources were used to collect the data for this study.

1. Secondary Source: Census and official and non-official records were consulted to know the location of the village, distance from centre of communication, history of the village, literacy, occupational pattern and other related aspects.

2. Primary Source: The major tool in this investigation for the collection of primary data was an interview schedule. The usual contradictions quantitative and qualitative material had to be faced. It was decided to tackle the problem simultaneously. The schedule was specially made so comprehensive as to take care of both quantitative and qualitative material.

In addition to identificatory, kinship data and acceptance of 'Technological innovations', stress was also laid on collecting both factual and attitudinal material and also its converse. The schedule was formulated so as to test as mentioned elsewhere how far agricultural technology has accomodated with the social structure of the village. The schedule was divided into following parts:

Part A: General information on age, educational level, religion, occupation, land holding, income, family type and cropping pattern.

Part B: Innovations: Adoption of improved practices, and process involved, barriers to adoption, source of information.

Part C: Media exposure and Mobility.

Part D: Official and Non-Official Contact.

Part E: Impact on --

i) Religiosity

ii) Family

iii) Education

iv) Marriage, and

v) Other attitudinal changes.

Much reliance was placed on individual interviews. All the interviews were recorded on a tape-recorder which saved time as well as helped to be more objective. It was felt that if the responses are noted before the respondent, he feels a bit hesitant in giving frank answers, but when it was recorded on a tape-recorder kept in a bag, the respondent was feeling free in responses. The researcher used to transfer all the responses afterwards on the schedules.

In order to fill up certain gaps that might arise with respect to answers of the respondents, observation method was also employed by the researcher. Since the researcher was living right in the village (with the respondents), it provided opportunity to observe many aspects of village life. Due emphasis was given on making a note of every observable detail by the researcher, in day to day diary.

Field Work

The field work was carried out in two stages. In the first stage which lasted 15 days (from 15 to 30 March 1976) pre-testing of the schedule was done in one village near the study village. After modifying the schedule, the second stage of

field work was carried, which lasted two months (from 1st October to 30th November, 1976). The idea behind selecting this period was that farmers are comparatively free during this period.

For any type of interview, establishing a rapport is a pre-requisite. The researcher was helped by the officials of the Agriculture Department in this regard to a great extent. Apart from this by introducing himself before a group of villagers and explaining the purpose of the visit to them and sometimes handing over the interview schedules to some of the literate villagers, the researcher tried to remove the suspicion from the minds of the respondents about himself as an outsider. The process of building good rapport continued and become increasingly better as the interview progressed. The assistance of the V.L.W. and some key persons of the villages was no longer needed when the confidence of the people was gained. Various items were exposed by attending formal meetings and ceremonies and participation in various informal off-the-record chats with the villagers.

Operational Definitions of the Terms Used

1. Adoption: refers to the adoption of five improved practices in agriculture, viz. improved implements, fertilizers, pesticides and insecticides, improved seeds and improved live-stock.

2. Functional Head: was defined as one who is instrumental in taking decisions in the family on agricultural matters.

3. Technological Changes: refers to the change in agricultural technology.

4. Social Implications: has been operationally defined as the observed impact of technological changes in agriculture on certain aspects of social life.

5. Village A: stands for progressive village Dyalagam.

6. Village B: refers to non-progressive village Kamar.

Data Processing and Analysis

The statistical measures which have been used in the study include: percentages, averages, zero-order correlation and chi-square test. Analysis was done manually.

Percentages

The data was transferred on the IBM sheets and IBM cards were punched. Cards were sorted for preparing simple percentage tables. For drawing percentage, the frequency of a particular cell was multiplied by 100 and divided by the total number of respondents in that particular category to which cell they belonged. Percentages were calculated upto two places after the decimal point. This has helped in organizing the data with clarity and precision.

Averages

Averages were used to compare two or more series. They were generally used to find out the average adoption score in order to measure the relative changes in the level of a phenomena as compared to the level of some lower level phenomena.

Chi-square Test

Chi-square analysis was done normally for testing the significance of association between the two variables. The formula used for calculating

Chi-square test has been as follows:

$$x^2 = \Sigma\left[\frac{(fo - f_2)^2}{fe}\right]$$

This was tested at .01 and .05 levels of probability.

Parson's Co-efficient of Correlation

The test was used to find out the zero-order correlations to measure the degree of relationship between two variables. The formula used has been as under:

$$r = \frac{\Sigma XY - \frac{(\Sigma X)(\Sigma Y)}{N}}{\sqrt{\left[\Sigma X^2 - \frac{(\Sigma X)^2}{N}\right]\left[\Sigma Y^2 - \frac{(\Sigma Y)^2}{N}\right]}}$$

Where N = Number of pairs being correlated

X & Y = The variables being correlated

r = Value tested at .01 and .05 levels of probability.

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CHAPTER V

THE SETTING

Before discussing the villages of study at length, it will be worthwhile to have an overall image of the field at State as well as the district level.

State Level

Physical Features

The State of Jammu and Kashmir is situated on the northern extremity of India. Being slightly smaller than Great Britain, with an area of 2,22,236 sq.km. (roughly 55 million acres) between 32.17° and 36.58° North latitude and 73.26° and 80.30° East latitude, is mostly bounded by international borders touching China and Tibet in the East, Sinkiang and Afghanistan in the North, U.S.S.R. in the North West and Pakistan in the West. The valley of Kashmir alone is 80 miles in length and 25 miles in breadth, and ranges in altitude between 5,200 and 6,000 ft. above sea level. In terms of population the State ranks 16th according to the 1971 census thus holding the rank it did in 1961. This works out the density of the population as 33 per sq.km., the lowest among the States with the exception of Nagaland. Even among

the Union Territories only Andaman and Nicobar Islands rank lower with a density of population of 14 per sq.km. Such low density suggest a very sparse population for the State, but in fact this is not so. Excluding the unreported area of 97,219 sq.km. (under the occupation of Pakistan and China), the spread of population per sq.km. in the State works out to be 110. This take into account vast forest areas which constitute about 15% of the geographical area of the State.

From the geographical point of view, the State is divided into three distinct regions; Jammu, Kashmir and Ladakh. Jammu province consists mostly of the sub-mountain and semi-mountainous tract contiguous to the Punjab and broken Kandi areas skirting the Pirpanjal ranges as also the outer hills south of the mountain ranges commonly known as the 'Sivaliks'. Pir Panjal mountains divide the two provinces of Jammu and Kashmir and begin from the south-east at the Chinab river ending on the North-West. Bounded by these sentinels of nature is the valley of Kashmir. Ladakh which presents a high level plateau desert, by and large devoid of vegetation, is to the east of the vast mountainous territory.

Climate

The climate of the State ranges from the burning and the scorching heat of Kathna (Jammu) to the snow capped heights of Gulmarg (Kashmir) and the mud peak of Mount Godwin Austin (Ladakh) 28,265 ft. above sea level, the second highest in the world. All these represent the three different climatic zones.

Administrative Divisions

For the purpose of administration, the three regions have been divided in to two provinces: Jammu and Kashmir (Ladakh is included as a district of the Kashmir province). Each province is headed by a Divisional Commissioner. There are four districts in Kashmir Division and six districts in Jammu Division. There are 45 tehsils, 305 land reform circles, 1486 patwar Halqas administering 6985 villages. There are 75 police stations and 84 police posts for the maintenance of law and order. The number of police stations commensurate with comparatively low crime rate in the State. Administrative set up of the State however needs more of inter-departmental coordination and self-contained units of administration. Although the offices of

different executive officers exist at the district head-quarter yet their jurisdiction is proliferated and not co-terminus with one another. Attempts are being made to correct this.

Population

1971 census place the figure estimates of population of Jammu and Kashmir at 46,16,632 out of which 24,58,315 were male and 21,58,317 female. The three districts of the valley of Kashmir are most populous accounting for about 53% of the total population and Jammu district for about 16%. The remaining 31% of population shared by as many as 6 districts. The Srinagar, Anantnag and Baramulla have 8.28, 8.32 and 7.76 lakhs population respectively. The Anantnag district ranks highest. The State recorded a population increase of 29.65% during the decade 1961-71, which is the highest in India.

According to the census figure of 1971 about 30% of the total population are economically active, which reflects that every working person has to feed on an average 2.3 persons who are not working. This does not however give an idea of the un-employed persons as the non-working class includes, children, students, old and disabled persons also, besides the

unemployed people. Detailed statistics of 1971 census of population indicate that the unemployment problem is comparatively severe in the urban area. This is so because about 65% of the working population is reported to be engaged in cultivation and another 3% as agricultural labourers. This shows that about 68% is confined to rural areas.

Agriculture and General Economy

1) Agriculture: The economy of Jammu and Kashmir is largely agrarian. More than 80% of the population lives in rural areas whose primary occupation is agriculture and allied activities. There are 6.29 lakh households in the rural areas with a family size of 5.98 persons per household at an average. The total area under cultivation is 8.67 lakh hectares of which 3.23 lakh hectares are irrigated. Main crops are rice, maize, wheat and barley. Till some years back, agriculture was practiced in the State on conservative lines. There were no real and serious efforts on the part of cultivators to adopt new methods of cultivation or even to use high yielding varieties of seeds. Over the years particularly after 1965-66, when there were acute scarcity conditions all over the country

the advice of the Government and its extension agencies was heeded by the farmer community. Since then its impact has been increasing and every year more and more acreas are covered under such programmes. Main factors responsible for this change have been the irrigational facilities and improved agricultural practices available in the sub-tropical areas. Production of food grains in 1973-74 was 10.13 lakh tonnes as against 9.2 lakh tonnes in 1972-73. The area under high yielding variety increased from 2.57 lakh hectares in 1972-73 to 3.00 lakh hectares in 1973-74. Horticulture has made considerable progress in recent years, the area under it in 1973-74 was 61,000 hectares as against 57,000 in 1972-73. Production of fruits was 2.16 lakh tonnes in 1973-74 as against 1.83 lakh tonnes in 1972-73.

ii) General Economy: 37% of the State income was generated from the agricultural sector in 1971-72. There was a considerable increase in cereal production from 1966-67 but it has not yet touched one-million tonne mark. The constraints of topography and small holding size, landlord-tenant relationship, other factors have stood in the way of rapid advances

in the sector and benefits of modern technology, like improved variety of seeds, fertilizer, mechanisation, etc. This technology could thus make its impact only in some areas.

There is no broad industrial base in the State due to the obvious difficulties of communication, topography and climate, etc. This sector contributes only 2% to the State economy. Sericulture is a major industry. Production of raw silk in the State increased from 19.22 lakh kg. in 1972-73 to 22.39 lakh kg. in 1973-74. Other important industries which have come up in the State, are a H.M.T. Watch factory and an ancillary unit of Indian Telephone Industries, both at Srinagar. Main cottage industries are carpet and shawl making, engraving, carpentry and handicrafts. Over 60,000 persons are engaged in traditional handicrafts.

iii) Mechanization of Agriculture: The State Government, Agricultural Department introduced a scheme of 'improved agricultural implements' in the mid sixties. It was realized that improved agricultural implements, machines and tools designed elsewhere in the country could not be adopted in local conditions without necessary modifications. In this connection a number of such implements were brought from outside

the State. It thus became evident that a rational approach to the problem of designing and developing the improved implements suitable for rugged topographical conditions of the State, is to develop the implements and machines incorporating the good features of those designed elsewhere and the indigenous ones if they had any.

Correctness of the approach was established when the first few improved implements developed on these lines like the Shalimar plough, Shalimar puddar and orchard ladders, gave encouraging results. Thereafter a number of implements, tools and machines were designed, developed, tested and found satisfactory. At present an elaborate programme is on way at Government Agricultural Workshop, Shalimar, with the following objectives:

i) Designing and development;

ii) Testing;

iii) Demonstration and Popularization;

iv) Manufacture and Sale;

v) Training; and

vi) Technical assistance to private fabricators and all those who are connected with the field of agricultural engineering.

The highly undulating topography, crop growth, soil condition and management system demands a careful designing of the implements as most of the conditions are quite different from other parts of the country. The workshop has from time to time been in touch with various fields connected directly or indirectly with agriculture in order to assess their need. Apart from this, tractors were also introduced in the State. This being an expensive affair individual farmers especially the poor ones, could not afford them. The Government therefore started a tractor hiring organization which was later brought under the purview of the Agro-Industries Corporation.

Irrigation and Water Supply

Major irrigation schemes already completed are the Kathua and Pratap canals which irrigate an area of 17,140 hectares. The Tawi lift irrigation scheme which was completed in 1973-74 will irrigate 13,480 hectares. In the Kashmir valley, irrigation is easy, subject to a normal snowfall in winter on the mountains, the water supply in the streams is enough. The main source of irrigation are the cnals looked after by the villagers, locally known as

'Zamindari Kuhls'. The villagers who depend on these Kuhls are obliged to assist in its maintenance. This system was introduced after 1880 when theGovernment instead of taking a share of the produce in kind from the villagers introduced a fixed cash assessment. Besides canals, irrigation in Kashmir is also practised through storage tanks particularly in Rajwand Lolab area of the Handwara and Kupwara tehsils of Baramulla district.

Important power schemes implemented since 1947 are the Gandarbal (15 mv.), Chenani and Kalakot (22.5 mv.). The power projects under implementation include upper Sind project and Lower Jhelem hydel project. Besides work on Salal hydro electric project, which has been taken over by the Central Government, is also in progress. Table 1 indicates the progressive increase in the outlays for power development and percentage expenditure on power to the total Plan outlay. As is clear from the Table 1, the installed capacity in 1974-75 was of the order of 93.62 MWs and the number of electrified settlements during the same year was as high as 1668.

Table 1

Installed Capacity and Settlements Electrified
J & K State

Year	Installed Capacity	Number of towns and villages electrified
1948-49	6.05 MWs	8
1955-56	12.23 "	33
1960-61	20.76 "	70
1965-66	27.58 "	501
1973-74	82.64 "	1412
1974-75	93.62 "	1668

Source: J & K Economic Development in figures
Director of Information, Srinagar, 1975.

Cropping Pattern

The State has two main principal crops viz. Paddy and Maize. Both account for roughly 57% of the total cultivated area and about 80% of the total cropped area during Kharif. Rice is the staple food of the people in Kashmir which occupies two-thirds of the total area. Both broadcast and transplant methods of sowing are used, respectively called 'Wotru' and 'Mihal' in the local language. The latter system requires elaborate preparations, right from the raising of nursery beds and their transplantation,

though the magnitude of the labour involved in broadcast system is comparatively more. The former method is generally however preferred both for reasons of double cropping and to meet any contingency resulting from excessive rains. Practically the whole area under this crop is irrigated in, Kashmir division, but a major portion in Jammu division is rainfed. Maize grown on dry lands covers 8% of the area and is the staple food of the Gujjar community of the State. Wheat is the staple food in Jammu and constitutes about 21% of the total cultivated area. A study of the cropping pattern of the State over the last 20-25 years indicates a decline in the cultivation of cash crops particularly oilseeds. (Table 2):

Table 2

Cropping Pattern - J & K State

Year	Cereals	Fruits and vegetables	Oil-seeds	Sugar-cane	Fibres	Condiment and spices	Other non-food crop
1950-51	1,432	29	92	2	10	3	79
1960-61	1,816	51	79	4	6	4	40
1970-71	1,914	64	64	5	4	4	83

Source: Report on Agriculture Census, J&K, 1970-71.

In order to stop widespread conversion of paddy lands into orchards, the Government ordered prohibition of such conversion but lately after the implementation of Agrarian Reforms law, the restriction has been relaxed. According to the Land Commission Report (1962) as much as 26,000 acres of paddy land were converted into orchards, seed farms, vegetable farms and other cash crops upto 1962.

Cultural Features

The State as a whole is the home of various races and sects, viz. the aborigines, Aryans, Buddhists, Jews, Brahmins, Tibetans, Arabs, Dogras, Rajputs, Turks, Persians, Mughals and Afghans, whose history of settlement can be traced back to thousands of years. But in the valley, fair complexion and regular features indicate that its people are mostly Aryans. They have a keen sense of form and colour and make excellent craftsman. Apart from the administrative division, which is no index to the social, cultural and economic classification of the people, the natural regions in which the state stands divided are a variety of physiology, languages, cultures and social structures. Bodhi, Shina, Balti, Gojri, Pahari, Kashmiri, Dogri, Punjabi, Poonchi are some of the languages and dialects spoken by large sections of the people, who

cannot understand each others language at all. The varying rainfall which provide abundant facilities of irrigation in some parts and cause perennial droughts in others resulting in a diversity of economic structures, add in no small measure to the heterogenous character of the State.

Above all the physical and social factors which have had a binding influence on the culture and economy of the people, are the monastries of Ladakh or little Tibet defying both time and change, the art shrines of Bashohli, Poonch and Ramnagar which serve as a light house of learning for art connoisseurs and laymen alike which contribute to the complexity of the socio-economic picture of the State. /

District: Anantnag

Anantnag (Islamabad) which is the area of study, is, one of the three districts of Kashmir valley. It is the most populous among all the districts of the State, and forms its south and south-western part. Geographically the district lies between 33°25' to 34°15' North latitude, bounded in the North and North-East by Srinagar and Ganderbal

tehsils of Srinagar district and in the East and South-East partly by Kargil tehsil of Ladakh district and partly by tehsil of Kishtwar, Doda andRamban of Doda district. In the West the district is bordered by tehsil Resai of Udhampur district and tehsil Rajouri of the newly carved district of Rajouri. The entire southern sector of the district which is contiguous with the tehsil of Reasi and Ramban consists of thick forests and nude mountains. Likewise the major part of the eastern region is also strewn with forests and mountains. Situated immediately below the Jawahar-Tunnel in the North, giving access to the Kashmir valley, it is the first point of physical contact with Kashmir for the incoming traffic from other parts of the country including the Jammu region.

Regarding the two names of the district i.e. Anantnag and Islarbad, the early history reveals according to well-known archaeologist, Sir Auriel Stein, the name Anantnag has been derived from the great spring, Anantnaga issuing at the southern end of the town. As far as the second name Islamabad is concerned, it is quoted that the district assumed this name by Islam Khan,

who was the Governor of Kashmir in 1663 AD. However, the district continues to enjoy both the names.

Area and Population

The district being the most populous in theState as per the 1971 census supports a population of 832,280 persons, which is little more than 18% of the population of the entire State. The density of the population in the district works out to 155 persons per sq.km. as per the 1971 census count.

The district extends over an area of 5,930 sq.kms. of which 5,366.7 sq.kms. arerural area and the rest 64.2 sq.km. urban. Further, the district consists of 1,220 villages and six towns, notified areas, which together returned a population of 6,54,368 persons with 6,08,795 from the rural sector and 45,573 persons from the urban sector. During the last ten years, the district has undergone notable jurisdictional changes. The area of the district shrunk due to the loss of 15 villages which were detatched from Pulwama tehsil and merged with Chadura tehsil of Srinagar district. But on the other hand inter-district change culminated in the creation of three more tehsils i.e. Pahalgam, Shupiyan and Tral. Thus the number of Tehsils rose from 3 to 6.

The number of villages falling under each tehsil has been listed out in Table 3:

Table 3

No. of villages - Tehsilwise: 1971.

S.No.	Name of Tehsil	No. of Villages	Remarks
1.	Pahalgam	65	65 villages plus one town transferred from Anantnag.
2.	Anantnag	270	-
3.	Kulgam	311	-
4.	Shupiyan	228	171 villages from Kulgam plus 1 town and 57 villages from Pulwama.
5.	Pulwama	248	-
6.	Tral	80	80 villages and 1 town transferred from Pulwama
	TOTAL	1202	

Education

Reviewing the overall progress made in the rural sector of the district in the field of education, the records reveal that in 1941 the total number of primary schools in all the three tehsils of which the district was constituted was 135 in all, indicating that only 11.6% of the villages had till

then primary level educational facilities. In the post-independence decade education received a great fillip, so much so that in 1961 the number of educational institutions had risen to 509, raising the schooling facilities to 41.72% of the villages. In 1968-69 (the latest information available), the number shot up to 1,004 with 729 primary and basic, 206 central, middle and 69 high and higher secondary schools and one college upto the degree level. This covered 866 out of the total 1202 villages; which works out to 72.05% of the total villages. This shows a speedy progress of the district in the field of education.

Medical Sector

In all the towns of the district there are medical institutions which can cater to in-patients. In all there are 97 medical institutions in the rural areas of the district with 80 dispensaries, 10 health centres and 7 family planning centres. It is against the 57 such medical institutions in 1961. This is an indication of the progress made in the extension of medical facilities during the last decade. There is one medical institution for 7,815 persons now against one medical institution for 10,589 persons in 1961 (census).

Power Supply

Electricity which is an important indicator of modernization and progress is still a wishful amenity for as many as 90% villages of the district as per the 1971 census report. Only 124 villages out of the total 1202 villages of the district enjoy power supply. Although looking at the past, it has increased from 24 villages in 1961 to 124 in 1969. A good indication is reflected by the fact that all the towns of the district have been provided with street lights. In addition, there are 107 industrial connections issued to three towns of the district i.e. Bijebehara, Pampore and Anantnag.

Communication

As far as the channels of communication (roads) are concerned, the available records reveal that 83% of the villages of the districts are connected by road. Out of this 38% are connected by pucca road. There is total absence of rail links in Kashmir, however, Jammu is linked with rest of the country by railways.

As far as the post and telegraph facilities are concerned, there are 140 villages having

post offices, 5 villages with telegraph office and 7 villages have telephone facilities in the district.

Sanitation and Water Supply

The most common latrines are the service and dry type latrines; water borne latrines are lacking in the whole district except in rare cases. The human excreta after decomposition serves as a manure for the growth of vegetables. As far as the drainage and sewerage system is concerned, it is crude, the entire waste is drained into rivulets, nallah's, cesspools, etc. through kacha and pucca surface drains.

All the towns of the district have been served with drinking water facilities through taps fed by reservoirs of varying capacity, constructed by public health engineering departments. Apart from this, nature has been lavish in blessing the district with abundant supply of spring water, so much so that the district headquarter may be called the town of springs.

Table 4

Number of Water Tap Installations in the District

Year	Private Posts	Public Posts
1960-61	952	230
1965-66	1458	918
1966-67	1609	1039
1972-73	2742	1895

Table 4 indicates that during the year 1960-61 there were 952 private and 230 public posts and now in the year 1972-73 there are 2,742 private posts and 1,895 public posts. On the whole this indicates a speedy progress in installing water taps.

Cultural and Recreational Facilities

As far as the recreational and cultural facilities in the district are concerned, the district is not well advanced in this sphere. The district possesses one cinema hall, one stadium and one public library, all the three at district headquarters. There are also three reading rooms one each at Kulgam, Pahalgam and Shapiyan, the tehsil headquarters.

Agricultural Credit and Non-Credit Societies

In order to improve the socio-economic conditions of the rural masses, credit societies are established. In this district eight out of the nine towns have credit societies and four out of nine towns are equipped with non-agricultural credit societies. In addition to this five towns enjoy banking facilities. In the district there is a total number of 227 different cooperative societies with a membership of 97,248.

Animal Husbandry

The district as a whole has made a good progress in the field of animal husbandry during the last decade as shown in the following Table:

Table 5

Year	Total No. of Units	Total No. of Vet. Asst. Surgeons	Total No. of Vet. Asstts. Stocks.	Total Number of Livestock treated	
				Animal	Poultry
1961-62	31	7	24	3,52,137	96,828
1971-72	47	14	46	2,08,823	1,39,688

Source: District Statistical Office.

The Table shows that during the decade there was an upward trend with regards to the number of units, number of veterinary surgeons and assistants, followed by increase in the number of animals and poultry treated.

Agriculture and Horticulture

Paddy, wheat and maize are the principle crops of production in the district. There are different seasons of sowing, harvesting and peak marketing of these crops as shown in Table 6:

Table 6

Sowing, Harvesting and Marketing Period of Principal Crops

S.No.	Agricultural Commodity	Sowing	Harvesting	Peak Marketing
1.	Paddy	15th April to 30th May	1st Sept. to 15th October	1st Nov. to 15th Dec.
2.	Maize	15th April to end of April	15th Aug. to 15th September	October
3.	Wheat	1st Oct. to end of Oct.	15th May to end of June	July
4.	Sasson	1st Oct. to 15th Nov.	15th April to end of April.	May

Table 7

Production of Principal Crops

Crops	1962-63		1971-72	
	Area (Acres)	Yield (qts.)	Area (Acres)	Yield (Qts.)
Paddy	177476	1576940	135942	1066916
Maize	89322	367040	74747	412238
Wheat	15720	148000	11139	32942

Source: (Field Survey) Report on Industries.

The above Table reflects the increase in the production of principal crops during the last ten years.

Table 8

Average Yield Per Hectare in Quintals

S.No.	Year	Paddy	Maize	Wheat
1.	1966-67	35.04	15.2	NA
2.	1967-68	44.71	15.8	NA
3.	1968-69	46.97	18.8	NA
4.	1969-70	43.14	8.2	10.70
5.	1970-71	45.60	11.70	41.36
6.	1971-72	56.07	23.24	40.88
7.	1972-73	45.93	38.15	40.52
8.	1973-74	42.20	19.96	-

Source: Directorate of Statistics (J&K).

The above Table reveals that the average yield of principal crops has increased, in case of paddy 35.04 in 1966-67, it has increased to 42.20 in 1973-74, and maize from 15.2 to 19.96 whereas in the case of wheat early data is not available, however, from 10.70 in 1969-70 it has gone to 40.52 in 1972-73. This remarkable increase in the yield is mainly due to the adoption of improved methods and techniques in the agricultural sector.

Similarly in horticulture there are three principle fruits commonly grown in the district, i.e. apples, walnuts and almonds. Improved techniques have also been used in this direction, which has resulted in good increase in yield as shown in the Table 9:

Table 9

Production of Principal Fruits - Anantnag district

S.No.	Variety of Fruit	Quantity (Quintals)		
		1969-70	1970-71	1971-72
1.	Apples	1424100	1731310	1932192
2.	Walnuts	67820	59061	88859
3.	Almonds	71035	65720	67590
4.	Others	27130	33924	29412
	Total:	1590085	1890015	2118049

Source: Report on Industries (J&K), 1973.

The above Table shows that in case of apples there had been a continuous increase in the yield as more attention was paid towards this. While in the case of walnut production decreased in 1970-71, but realising its importance and consequent attention, the yield increased in 1971-72. Similar is the case with almonds.

The analysis of all the above statements and data reveals that the district as a whole has made good progress almost in every sphere of life. It is this achievement of the district, which has made it popular in all the districts of the State.

There are certain spheres of activity where the district leads the other districts, as in case of panchayats (Table 10).

Table 10

Panchayats in Kashmir Valley

S.No.	District	No. of Panchayats
1.	Srinagar	171
2.	Baramulla	271
3.	Anantnag	275
	Total	717

There are 717 panchayats in the whole valley of Kashmir, in which the district of Anantnag leads the other two districts of the valley having 275 panchayats which constitutes 38% to the total number.

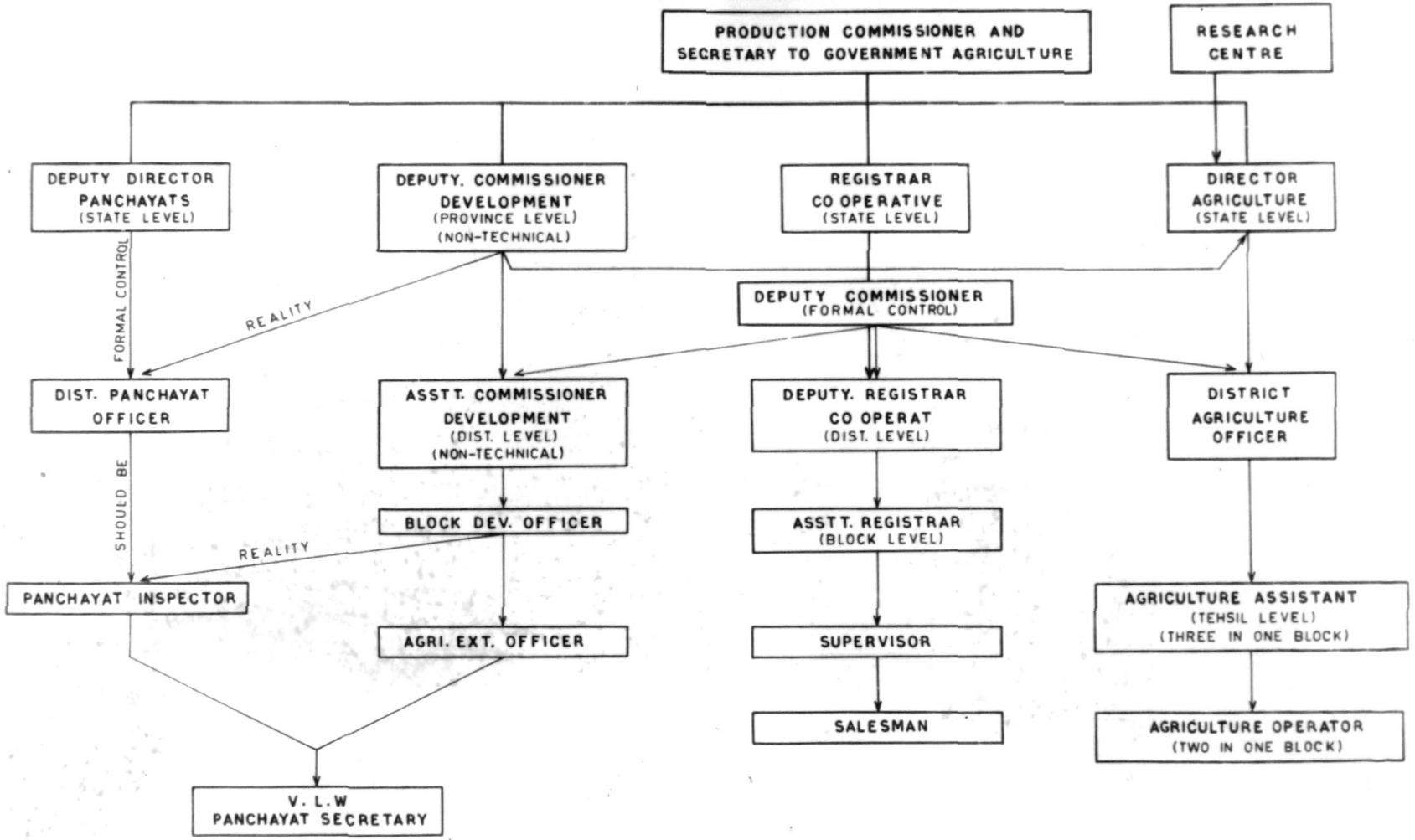
Administrative Set Up

The district consists of six tehsils, divided into 13 NES Blocks. The whole of the district was covered under the IADP programme in 1967. During the period, the district had been under the IADP programme (Intensive Agricultural Development Programme), the administrative and other extension machinery was strengthened, making the district suitable to be taken under the small farmers scheme. It has a sizeable area under irrigation but farmers have little experience of the high yielding varieties programme.

Before mid-sixties the activities of the developmental programmes were closely supervised by a single co-ordinating body at the block-level as well as the district level. But from mid-sixties onwards due to diverse activities of the extension services for the implementation in rural areas has become more inter-dependent. All the extension

Fig. 3

ADMINISTRATIVE SETUP FOR DEVELOPMENTAL PROGRAMMIR IN JAMMU AND KASHMIR



officers are answerable to their parent units, rather than to some one at the block level. The result is that extension services are now inter-dependant to a great extent as shown in the Fig.3.

The Figure 3 shows that at district level we have four district level officers, viz. Assistant Commissioner, Development; District Agricultural Officer; District Panchayat Officer; Deputy Registrar of Cooperatives. At the block level, the Block Development Officer is left with only one agriculture extension officer and a panchayat inspector. This departmental specialization has created a number of problems. Further, the diversity of rules and procedures followed by several agencies covering the same field does not bring fruits but blocks quick and early implementation of any programme, as basically coordination between different agencies is lacking. Steps are being taken to improve this system.

As already mentioned there are 13 NES Blocks in the district and the Block from which we selected the villages for study is Larikpora, which comes under the Tehsil head-quarters (Anantnag). It is 8 km. from the tehsil headquarter, 3 kms. from one village Dyalgam and 5 kms. from the other village Kanar.

VILLAGE LEVEL

Regarding the two villages, Dyalgam and Kamar, our sources of reference in this study, it would be useful to have an idea of their location, distance from main centres of communication, a brief history where available, level of education and occupational structure, etc.

Village A (Dyalgam)

Village Dyalgam is a developed village at a distance of 5 kms. from the tehsil headquarter (Anantanag) and 4 kms. from the Block headquarter (Larikpora). It is connected by a pucca road which goes to Verinag, one of the health resorts of the valley.

The village of Dyalgam, according to the ex-village Headman[1], was established in the times of Humayun, the Mughal King by Pandit Zenardan Raina. With the order of King Humayun, pandit Zenardan Raina came from Srinagar, the capital of the State, established the village and named it Dyalgam. In Hindi 'Dyalo' refers to God and in Kashmiri 'gam'

1. Ex-village headman provided the investigator with an old document, which was written by his grand-father about 60 years back who was the then village headman, about the history of this village.

means village. Thus he named this village in the name of God. Afterwards, the son of Pandit Zenardan Raina a spiritual man named Hashim Shah, called this Dyalgam. Since then village enjoys the same name. Afterwards in the regime of His Highness Gulab Singh, the village got divided into two parts Peth Dyalgam and Bona Dyalgam, because in Kashmiri Peth refers to up and Bona to down, so that the portion of the village which is northwards is called Bonadyalgam and which is southwards is called Peth Dyalgam. Now both of these are treated as separate villages, even in the census records. In this study we are concerned with Peth Dyalgam, which is generally called as Dyalgam.

The village Dyalgam has a total area of 476 acres, which has a total population of 1398 according to 1971 census, but at the time of study the population had gone upto 1500, with 150 occupied residential households. There is no main lane in the village. The main pucca road cuts the village into two parts. There is a good number of shops on both sides of the road. The village houses seem to have been built in an haphazard manner. This gives the village a very congested look. About 70 houses are large and spacious. Only 15 houses are built of pucca

bricks, the rest of them being built of kacha bricks and wood. Except for one or two spots, the village is fairly clean. During the winter and the monsoons it is very difficult to move about in the village, because of very muddy and water logged lanes which are in low lying tracts.

About a quarter of a mile to the north-east of the village is located an agricultural experimental farm (of the Agricultural Department) which is engaged in analysing the introduction of new varieties of seeds, the validity of fertilizer and other agricultural innovations in the local climatic conditions. The agricultural labour needed at the farm comes from the same village. On the south-west about one quarter of a mile on both sides of the village are located the agricultural paddy fields which belong to the villagers.

Land Holding

The majority of the villagers fall in the category of 10-15 canals per family, while the highest land holding group comes under the category of 40-50 canals, which are very few in number.

Irrigation

The only source of irrigation in the village are canals (called Zamindari Khuls) which are maintained by the villagers themselves. If there is water in the canal it is sufficient for the irrigational needs of the village, but one can never be sure, as it generally depends on the average snow fall in the winter. Sometimes scarcity of water for irrigation creates many problems especially for improved variety of paddy and fertilizer, the introduction of which needs constant water supply.

Agriculture

There are two growing seasons in Dyalgam village. The first is from April to October (Kharif) which is the main growing season. The principal crop during this season is paddy followed by maize which is planted in the unirrigated areas. The next season is from October to May (Rabi) in which there are two principal crops, one is wheat and the other is sarson. This season is used by those who are involved in double cropping. Mixed cropping, which refers to the practice of planting more than one crop at the same time in the same field, is followed in this village. The villagers justify this practice on the ground that if one of the crop fails, the other may not. This is

common in the Rabi season of growing. However, when paddy is grown there is no mixed cropping.

In the last seven or eight years people have begun to grow vegetables in their small vegetable gardens or nearby in small plots, such as potatoes, turnips, cauliflower, cabbage, tomatoes, chilli and others.

Out of the total area of 476 acres of the village, 268 acres are irrigated. There are 16 acres of unirrigated land, 74 acres of culturable waste and 118 acres, which is not available for cultivation.

Education

In the village Dyalgam about 30% of the population is literate or educated, consisting of 349 males and 92 females. There are two high schools in the village one for boys and the other for girls. Apart from these there is one lower middle school and two primary schools, one run by Tablegul Islam (religious party) and other an Islamia School run by a private organisation. There is also a public school. The student strength in the high school is 260 with 22 teachers out of which 18 are graduates and 3 to 4 post-graduates. The teachers are mostly from the same village or nearby villages.

There are four mosques in the village, two of which have loud speakers. There is one temple in the nearby village at Brinti Batapora. Apart from this there is a famous muslim Shrine of Baba Badrudin Rishi. People generally visit the Shrine according to their convenience.

The pacca road which cuts the village into two parts is lined by shops on both sides. There are 25 shops in all, which form the main market of the village. The shops belong to both Hindus and Muslims. Apart from this there are two machines one for rice and the other one for oil, run by electricity and owned by the villagers.

Occupational Pattern

Out of the total 362 workers as many as 51.1% are engaged in cultivation (See Table 11). The next single largest number is of those who are engaged in household industry (6.4%) and livestock, forestry, orchards, etc. (5.3%) followed by those who are engaged in trade and commerce (3.3%). The percentage of those who come under other services is very high (29%). But since the nature of their job is not known, they cannot be treated as a single occupational group. As observed in the Table 11, some of the other

Table 11

Occupational Pattern of Village Dyalgam

S.No.	Main Occupational Category	Number	Percentage
1.	Cultivators	185	51.1
2.	Agricultural Labourer	6	1.7
3.	Livestock, forestry, orchards, etc.	19	5.3
4.	Household industry	23	6.4
5.	Construction	7	1.9
6.	Trade and Commerce	12	3.3
7.	Transport, storage and communication	5	1.3
8.	Other services	105	29.0
	TOTAL	362	100.00

Source: Census J & K 1971 - District: Anantanag.

occupational categories engage people in varying numbers ranging from 1.9 percent in construction to 1.3% in transport, storage, etc. But it is quite evident from the 51.1% cultivators that the occupational structure of the village Dyalgam is rural based.

Local Administration

There is one panchayat in the village whose members are elected for a term of five years. Members elect from among themselves a Sarpanch. The panchayat continues to be the local self-governing body of the village. The panchayat in the Dyalgam village is not active. It is housed in a rented building. Although it has constructed six bath-rooms and six latrines for common use, half of the village have their own bath rooms.

Other Features

There is one cooperative society in the village which distributes fertilizers and seeds, one animal husbandry centre and one family planning centre. A television set is installed at the high school building by the Government. Almost 100 households possess either radio or transistor sets in their houses. People are very much interested not only in local affairs but also world affairs at large. There is one post office in the village which has the public telephone facility.

One interesting feature of the village which the investigator noted is that the joint family seems to be on way to disintegration. There are only

20 to 25 joint families now left in the village. Further, there are four doctors, two engineers and two advocates from the village, which reflects its progressive outlook.

This village has been noted for the progressive outlook of its farmers. It was found that farmers adopt improved practices by stages. First the adoption is on a small scale and if successful, only then they proceed on a large scale. Fertilizers and some improved seeds were brought to the village long before and were applied as required. A progressive farmer planted the new variety in his own field, along with all the other required inputs. There was a very good crop. He was awarded a prize by the district level authority. A few others also followed and this propogation received a fillip in 1967 due to the crash programme- IADP. Chemical fertilizers are used almost by all the farmers now, and they fully realize that the use of fertilizers is good for increasing the yield.

Village B (Kamar)

Village Kamar is an under-developed village located at a distance of 4 km. from the district headquarters (Anantnag) and 5 kms. from Block

headquarters (Larikpora). It is connected by a kucha road both to block headquarters as well as district headquarters.

It is said that at the time of settlement of this village, there were only eleven houses, and it was called Kamad, which with the time changed to Kamar.

The village Kamar has a total area of 532 acres which has returned a total population figure of 1262 according to the 1971 census, but at the time of study the population had gone up to 1450 with 215 occupied residential houses against 143 at the time of 1971 census. The houses are generally kacha except for a few, haphazardly constructed pacca ones. The village is surrounded by large paddy fields.

Land Holding

The majority of the villagers possess 10-20 canals of land per family, while the highest land holding group do not possess more than 50 canals of land, and their number is very less.

Irrigation

The only source of irrigation is canals (called Zamindari Khols) as in the Dyalgam village, and here too they are maintained by the villagers

themselves. It is a natural source of irrigation depending on the average snow fall in the winter. Generally there is no dearth of irrigation facilities, as this canal water keeps running for the whole year.

Agriculture

As in Dyalgam village, there are two growing seasons in a year. This as such is a common phenomenon in the whole valley of Kashmir. The two seasons are Kharif and Rabi. The Kharif growing season is from April to October in which the main crop is paddy and the Rabi growing season from October to May in which **sarson** is the maincrop. In this village comparatively there is less of double cropping, than the village Dyalagam. There is no mixed cropping in the second growing season as in Dyalgam. Vegetables are grown in the small plots nearby.

Out of the total area of 471 acres of the village 302 acres are irrigated. The unirrigated area amounts to 3 acres only but there are 90 acres of culturable waste and 137 acres, are not available for cultivation.

Education

The literacy of the village is about 17%. There are two schools in the village, viz. a central school and a girls primary school. The number of students in the central school is 250 while there are about 30 students in the girls primary school.

There is one mosque and one muslim shrine in the village. The population of the village is cent percent muslim.

There is a kachha road which passes through the village. On the side of the kachha road there are only two or three shops which belong to the villagers including a cooperative society, which distributes only fertilizers.

Occupational Pattern

Out of the total 350 workers as many as 69.7% are mainly engaged in cultivation (see Table 12). The next single largest number is of those who are engaged in household industry (8%). In the village Kamar generally these people are engaged in willow work which has a market at the district headquarters.

Table 12

Occupational Pattern of Village Kamar

S.No.	Occupational category	Number	Percentage
1.	Cultivators	244	69.7
2.	Agricultural labour	6	1.7
3.	Livestock, forestry, orchards, etc.	6	1.7
4.	Household industry	28	8.0
5.	Other than household industry	3	0.9
6.	Construction	2	0.6
7.	Trade and commerce	26	7.4
8.	Transport, storage and communication	2	0.6
9.	Other services	33	9.4
	TOTAL	350	100.0

Source: Census J&K 1971 - District:Anantnag.

Next to the household industry comes, Trade and Commerce (7.4% - Table 12). Although the number of those who are engaged in other services ranks higher than those engaged in the household industry. As is evident from the Table 12, the rest of the occupational categories do not account for much, ranging from 0.6 percent in Transport, communication and construction to 1.7 % in agriculture labour or live-

stock, forestry, orchards, etc. The Table as a whole reveals that the majority is engaged in cultivation, indicating that cultivation is the main occupation of the village.

Other Features

There is one co-operative society in the village, which is located in a shop for the distribution of fertilizers. The society is not functioning properly and the poorer farmers are not much benefited by it. There is no animal husbandry centre in the village. The village does not have any television set. However about 30% of the households have radio sets and those who do not possess sometimes make use of others. The radio is the only media by which the villagers are exposed to new practices. Hardly any expert visits the village. There is lack of communication facilities, hence there are no demonstrations of new practices.

The joint family system still has a strong hold in the village. From the village records it was ascertained that 70% of the household still live in joint families. The village people however do feel that they lack facilities. Some of them possess bicycles, by which they go to the nearby village

of Dyalgam where they are able to make some purchases. Generally the villagers go to the district headquarters (Anantnag) for major shopping.

The above description of the two villages suggests that although these two villages are at a distance of only 3 kms. from each other, but there is a vast difference in their life styles as well as other related features.

CHAPTER VI

ADOPTION OF MODERN AGRICULTURAL PRACTICES

Agriculture is the pre-dominant economy in the State of Jammu and Kashmir. In view of the limited resource endowments of the State in other fields, it will continue to be the major source of income and employment to the bulk of the State's population in the years to come. However, even for the development of agriculture, the physical and climatic conditions act as inhibiting factors in some parts of the State. Moreover, the extremely small size of holding and absence of further scope for extension of cultivation make it imperative that agriculture should be organised in such a manner that the limited land available is able to yield the maximum through the judicious application of modern agricultural technology adapted to local conditions.

Knowledge about the innovation is the first stage in the process of adoption, followed by the farmers' attitude towards it and then comes the real adoption. This chapter has been devoted to examine the differences in the two villages with regard to knowledge, attitude and adoption of improved practices. This has been followed by a discussion on the individual variations of the

adoption process. The discussion includes the adoption of improved farm implements, use of chemical fertilizer, insecticides and pesticides, improved seeds and possession of improved livestock. These five practices were selected for the purpose of this study with the assumption that these major technologies, if adopted extensively and in their right perspective a break-through in agricultural production can be brought about. The extent of knowledge, attitude and adoption of the selected improved practices have been presented in the Table 13 that follows:

Table 13

Extent of Knowledge, Attitude and Adoption of Improved Practices in Progressive and Non-progressive Village.

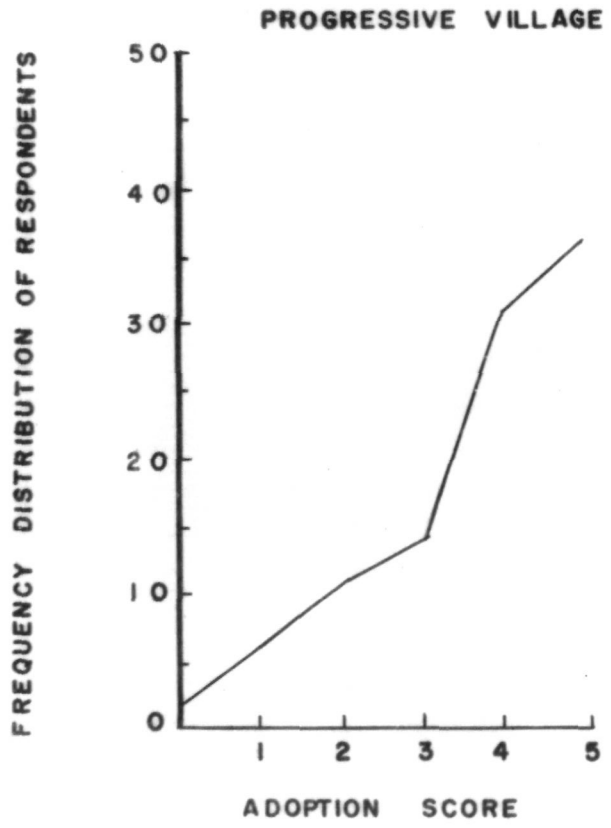
Item	Village A (Percentage)						Village B (Percentage)					
	Modern Imple-ments	Perti-lizer	Agro-chemi-cals	Seeds	Live-stock	Total %age	Modern Imple-ments	Perti-lizer	Agro-chemi-cals	Seeds	Live-stock	Total %age
Knowledge	100.00	100.00	97.00	100.00	70.00	93.4	66.00	100.00	41.00	98.00	50.00	71.00
Favourable Attitude	98.00	98.00	92.00	90.00	60.00	87.60	60.00	80.00	30.00	75.00	30.00	55.00
Adoption	80.00	90.00	70.00	85.00	15.00	68.00	32.00	73.00	13.00	70.00	5.00	38.60

It is obvious (Table 13) that the extent of knowledge about the improved practices varies in case of the farmers of the two villages. In the Village A, 93.4 percent of the respondents were aware of the improved practices against 71.00 percent in Village B, inspite of the fact that both villages are near to each other and are served by the same extension agency. This variation between the two villages under study was even more in the case of the farmers' attitudes towards the improved practices. It is also evident from the Table 13 that 87.6 percent farmers had a favourable attitude towards the improved practices in Village as compared to 55 percent of the sample respondents in the Village B. The Table further reveals that 68 percent of the respondent farmers of Village A adopted the improved practices against the 38.6 percent in Village B.

Thus, it is clear from the above data that farmers of the two villages were at the different stages of knowledge, attitude and adoption of the improved practices.

It is clear from the Figure 4 that with the increase in the adoption score in Village A

FREQUENCY DISTRIBUTION OF RESPONDENTS OF TWO VILLAGES AGAINST ADOPTION SCORE



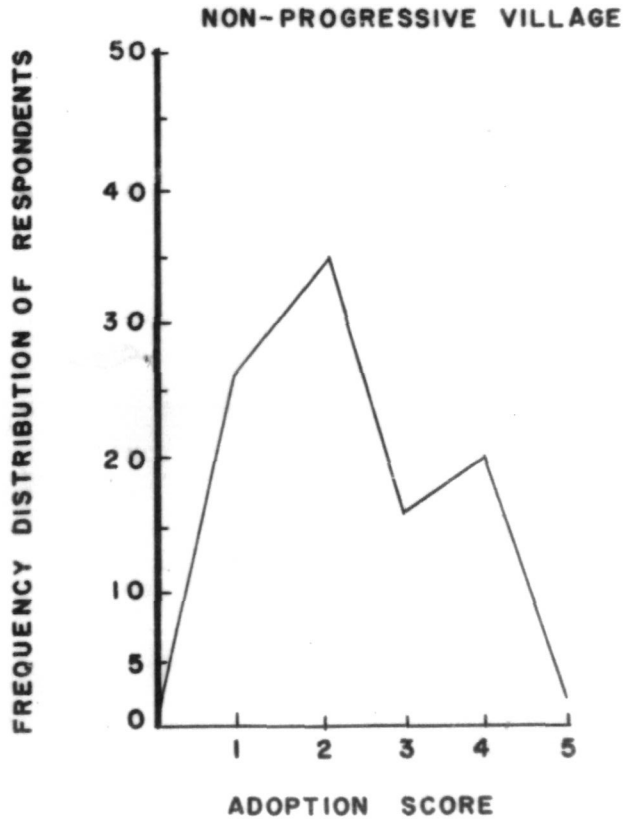


Fig. 4

frequency of the respondents also increases. In other words, major number of respondents had adopted more than one practice. In contrast to this in Village B there is increase in frequency up to Score 2 and then a steady decrease down to frequency 2 at Score 5. The analysis reveals that higher the score, higher the number of respondents in village A, whereas higher the score, lower the number of respondents in Village B. It clearly shows that Village A has higher adoption than in Village B.

Adoption of Improved Farm Implements

The value of improved farm implements for various agricultural operations has increased due to the adoption of modern inputs. The increasing demand of labour throughout the year has inspired farmers to adopt improved farm implements, so that the cost of production can be reduced and the time is saved. Secondly, in order to have more than one crop a year, various agricultural operations between one crop and the other must be conducted as efficiently and as quickly as possible. Tractors play an important role in this respect. But tractors are very expensive and individual farmers, especially the poor, cannot afford them. At the same time, the majority of farmers have small and scattered holdings. Although the Government

had started a Tractor Hiring organisation under the Agro-industries Corporation, only those farmers could benefit who have their holdings consolidated. The Corporation also provides threshers and harvesting machines. The improved plough known as Shalimar plough designed by the local Government workshop (discussed else where) thus became popular as it was within the reach of a common man.

Under the adoption of improved farm implements it was desired to examine the extent of adoption of improved farm implements like tractors, shalimar plough, threshers and harvesting combines and to find out the difference in the extent of adoption between the two villages.

Table 13 shows that the two villages vary considerably in this regard. In VillageA, 80 percent of the respondents were using either of the above implements. Contrary to this in Village B only 32 percent adopted either of the above mentioned improved farm implements.

Thus the differences in the adoption of the above mentioned improved farm implements reveals that the farmers in the non-progressive Village B are less convinced about the utility of their application.

Although both the villages are quite close to each other and are under the same extension agency, the farmers of progressive Village A show more acceptance and increasing interest towards the adoption of improved implements.

Extent of Adoption of Chemical Fertilizers

Though the suggested mechanization of agriculture would benefit the State economy to some extent, its beneficial effects would be confined to a limited number of farmers, because of very small land holdings and other geographical conditions. However, a major break-through in agriculture embracing the vast number of farmers all over the State, can come only through the increase in the use of inputs such as fertilizers, seeds, and pesticides.

For improving soil fertility, greater reliance was placed on the use of chemical fertilizers than on organic manures and green manuring. The scope for green manuring in the State is extremely limited, because of small holdings, which do not permit the loss of one crop in favour of a green manuring crop.

Table 13 shows the extent of to which the chemical fertilizer was used by the farmers of both the villages. In the progressive Village A about 90 percent

of the respondents reported the use of chemical fertilizer against the 73 percent in the non-progressive Village B.

The extent of adoption of chemical fertilizer however did not vary much as in case of modern implements, but still the progressive village shows an increasing trend in the use of chemical fertilizer.

Use of Insecticides and Pesticides

With the introduction of high-yielding varieties, heavy application of fertilizers and intensive cultivation etc., the production per unit area has increased. But at the same time the conditions which are favourable for plant growth and crop yield also provide favourable conditions for devastating attack of plant pathogens. Thus the need arises to fight this menace, by adopting suitable plant protection measures. Here the use of insecticides and pesticides becomes necessary.

The analysis shows that there was a great variation in the use of insecticides and pesticides in the two villages under consideration. In the progressive village A, 70 percent of the respondents made use of insecticides or pesticides to fight against plant and crop diseases. This figure was as low as only 13 percent in the non-progressive Village B.

Thus the extent of adoption of insecticides and pesticides in progressive Village A justifies that the farmers of the village are more convinced about the utility of the agro-chemicals than the non-progressive Village B.

Improved Seeds

For achieving rapid growth in agriculture, greater emphasis was placed on the use of improved seeds. The variety China 1039, recommended in the district, is capable of yielding 6,500 kgs. per hectare. As a matter of fact, some of the progressive cultivators have been able to obtain a maximum yield of over 8,000 kgs. per hectare with high dose of fertilizer.

In recent years, there has been a shift from this variety to the old local varieties, because this sheds and matures two to three weeks later than the old variety.

In the present study, there is little variation in the adoption of improved seeds. In the progressive Village A, 85 percent of the respondents had adopted the improved seeds, while in the non-progressive Village B, only 70 percent could do so.

Thus, it can be concluded that though there is little variation in the adoption of improved seeds, progressive Village A had adopted these to a greater extent than the non-progressive Village B. This makes it clear that farmers of the progressive village are more inclined to modern methods and practices than those of the non-progressive village.

Possession of Improved Live-stock

Side by side the high priority to the feeding problem, the question of improving the local live-stock breeds was also taken up in the State. As in the rest of the country, the State of Jammu and Kashmir too initiated the programme of upgrading the local stock by starting cattle breeding farms, artificial insemination centres and key village centres. This programme, however, could not make significant impact on the quality of the local breed. The reason being; firstly the centres are inadequate, secondly, the feeding programme has not been taken up seriously, without which breeding programme cannot be effective and, thirdly, little has been done to eliminate the poor breed which obstruct any programme of improving the breeds. For upgrading the local stock, it was tried to fuse 'Red Sindhi' among local cattle and Jersey bulls mainly with hill cattle,

but their genotypic characters have become dormant because of ill-feeding and other reasons. Thus the programme of artificial insemination slackened over the years instead of speeding up.

This is evident by the figures given in the Table. In Village A only 15 percent of the respondents have improved livestock, whereas in the village B, it is only 5 percent. The analysis reveals that the farmers are not convinced about the improved livestock.

The overall picture is that there is a great variation in the levels of adoption of improved practices between the two villages. The Village A denoted as a progressive village ranks high in respect of adoption of improved practices as compared to Village B, which is considered as a non-progressive village. Although with regard to certain practices as chemical fertilizers the variation gap is not so wide, this may be because of the reliance placed on the use of chemical fertilizers. This analysis however will facilitate the comparison between the adoption and non-adoption and their consequences on the social aspects of the village life.

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Source of Information

Flow of information, the circulation of knowledge and ideas is maintained through various communication media. These media play an important role in the diffusion and adoption of innovations. In the present study, communication media is conceptualised as a source through which farmers get information about the agricultural innovations.

The respondents were asked a multi-choice question to study their major sources of farm informations. A number of sources were mentioned by the respondents of both the villages which were divided into three categories, as by Wilkening (1962), viz:

1) Personal Localite: These include communication with friends, relatives, neighbours, village leaders, etc.

2) Personal Cosmopolite: It refers to communication with extension agents, farm supply-store personnel, farmers from neighbourhood, etc.; and

3) Mass Media: which includes newspaper, radio, television, etc.

The responses thus received and their relative importance is shown in the following Table:

Table 14

Source of Information

Information Source	Improved Implements		Chemical Fertilizers		Insecticides & Pesticides		Improved Seeds		Improved Livestock		Total
	A N=80	B N=32	A N=90	B N=73	A N=70	B N=13	A N=85	B N=70	A N=15	B N=5	N=533
Personal Localite	38.75	62.50	28.88	39.72	31.43	46.15	35.29	70.00	13.33	-	40.33
Personal Cosmopolite	48.75	25.00	35.56	34.25	61.42	23.07	60.00	61.42	53.33	60.00	47.84
Mass Media	75.00	56.25	68.89	52.05	71.43	61.53	61.17	44.28	60.00	60.00	61.91

A denotes Village A

B denotes Village B

The Table 14 reveals that the major source of information regarding improved implements in Village A were the Mass Media (75%) followed by Personal Cosmopolite (48.75%) and Personal Localite (38.75%). In contrast to this in the Village B, the major sources of information were Personal Localite (62.50%) followed by Mass Media (56.25%) and Personal Cosmopolite (25 %).

In the case of chemical fertilizer, 68.89% of the total adoptors mentioned Mass Media as a source of information, 35.5% Personal Cosmopolite and 28.88% Personal Localite, whereas in Village B, Mass Media ranked the highest (52.05%) followed by Personal Localite (39.72%) and Personal Cosmppolite (34.25%).

In case of Insecticides and Pesticides, Mass Media were mentioned as the main source of information by the adopters of both the villages. In Village A, 71.43% adopters mentioned it followed by Personal Cosmopolite (61.42%) and Personal Localite (31.43%). In Village B, Mass Media were mentioned by 61.53% followed by Personal Localite (46.15%) and Personal Cosmopolite (23.07%).

Regarding the source of information of the improved seeds in Village A, Mass Media and Personal Cosmopolite sources were found to have equal importance, 61.17% and 60.00% adopters mentioned these sources respectively followed by Personal Localite which was mentioned by 35.29% adopters. Contrary to this in Village B, Personal Localite (70%) were found to be the major source of information followed by Personal Cosmopolite (61.42%) and Mass Media (44.28%).

In the case of improved livestock in Village A, the Mass Media was mentioned as the major source of information (60%) closely followed by Personal Cosmopolite (53.33%) and then by Personal Localite (13.33%). In Village B, Mass Media and Personal Cosmopolite were found equally important (60.00% each) as the sources of information.

Considering all the improved agricultural practices together, the Mass Media was found the major source of information (61.91%) followed by Personal Cosmopolite (47.84%) and Personal Localite (40.33%).

CHAPTER VII

PERSONAL AND SOCIO-ECONOMIC FACTORS AND ADOPTION

There are various factors responsible for the adoption of agricultural innovations. The process of adoption which involves decision-making on the part of the farmer, not only takes into account the economic advantage of the innovation but also depends upon the social setting in which he is placed. In India, caste assumes special importance but it has got very little relevance in the present study. The field of the study being a predominantly muslim area, there is no prominent caste hierarchy. Not only this even in the Hindu community of the valley the hierarchy is not so prominent as in other parts of the country. However, in this area family type is of great importance in this respect. It is in the nucleur-family where there is a higher degree of inclination towards adoption. The educational factor also assumes much importance, as it governs the degree of understanding of new innovations. Size of land-holding as well as the income level of the farmers have been used as a measure of their economic status. Along with this other occupations of the farmer are also well connected with the socio-economic factors. It is true that the

mainstay of economy of farmers is agriculture, however, they also depend on certain subsidiary occupations, viz. business, service, etc. to some extent. which not only expands their outlook but also increases their income level. Therefore they are in a better position than those who depend solely on agriculture to invest in agricultural innovations.

Apart from these socio-economic factors, there are a number of personal factors also, which play an important role. The most important among them is age. The young are considered to have a higher degree of receptiveness than old people who are somewhat reluctant to change from age old practices.

Age

In the present situation,age of the respondent was noted to study its effect on acceptance of improved practices. The average adoption score in the different age groups in the two villages is given in the Table 15.

Table 15

Average Adoption Score at Different Age Groups

Age Group (years)	Average Adoption Score	
	Village A	Village B
Young (upto 35)	4.08	3.04
Middle (36 - 50)	3.96	2.21
Old (51 & above)	2.42	1.68

Analysis shows that the young age-group (upto 35 years) leads in adoption in both the villages, which is followed by the Middle age group (Table 15). The average adoption score is found lowest in the old age group. It seems that as the farmer grows old he becomes reluctant to invest in what he feels are 'unnecessary' improvements, thus becoming more resistant to change.

In the case of the higher age group, the adoption score decreases. This is confirmed by applying the co-efficient of co-relation test. The village wise co-efficient of co-rrelation or 'r' are given below:

Table 16

Village	'r' Value
A	- .260*
B	- .407*

*Significant at .01 level of probability.

It is clear (Table 16) that in both the villages there is a negative co-relation (significant at .01 level) between age and adoption, which establishes a direct relationship between the age and adoption.

Education

Educational level of the farmers also have direct bearing on the degree of adoption on innovations in agriculture. The literate and the relatively educated are significantly more prone to accept innovations because the education widens their horizon of knowledge and they can understand and anticipate benefits of new innovations more precisely.

The average adoption score at different levels of education was calculated for both the villages and the results were obtained (Table 17).

Table 17

Average Adoption Score at Different Levels of Education

Educational level	Average Adoption Score	
	Village A	Village B
Illiterate	2.35	1.69
Can read and write	3.30	2.47
High School	3.85	3.44
Graduate and above	3.82	4.16

It has been established (Table 17) that higher the educational level, higher is the adoption score, which indicates that adoption score is related to the educational level of the farmer. There is a gradual rise in the adoption index with the rise in educational attainments in Village A. On the other hand in Village B, the rise is steep as the educational level increases.

Those respondents having educational level upto graduation or above in theVillage B possess a higher average adoption score than Village A. This may be due to the importance attached to educational attainments in the non-progressive village. In Village B the overall literacy percentage of the village is 17% compared to 30% in Village A (Appendix Socio-economic

Table 2). Thus the educated persons who get exposed to new ideas became more sensitised to change.

On the whole the analysis reveals that higher the educational level, higher the adoption. The co-efficient of correlation between these two variables were worked (Table 18).

Table 18

Village	'r' Value
A	.544*
B	.701*

*Significant at .01 level.

There is a positive correlation between the two variables significant at .01 level of probability, establishing the relationship between education and adoption as is shown in Table 18. Education allows for the induction of ideas and standards from outside the family. This provides a sort of impetus as well as a rationale for accepting new technology.

Income

Higher income has been known to influence individual behaviour. Not only that they are in a position to invest more for improvement, but change

agents also work with them more closely as it is easier for them to convince such farmers about the new ideas. Inspite of having positive attitudes for certain recommended practices, farmers generally do not go for adoption. The reason generally advanced is the economic condition. In the present study the average adoption score was worked out for different levels of income in order to see the influence of the latter on the former. The findings as presented in Table 19 shows that adoption score relates to the income

Table 19

Average Adoption Score at Different Levels of Income

Income Group (Monthly) (Rupees)	Average Adoption Score	
	Village A	Village B
Upto 150	1.60	-
151 - 300	1.42	1.27
301 - 450	3.88	2.53
451 - 600	4.00	2.69
601 - 750	4.41	3.40
751 - 900	3.50	-
901 -1000	6.00	-

level of the farmers. In Village A, there is a sharp

rise in the adoption score between the income level of 151-300 to 301-450. Only at 751-900 income level the adoption score has fallen. This may be due to the reason that at this income level, farmers sometimes feel satisfied with the quantity they produce and are not interested to go in for more innovations. However, on the whole there is a steep rise in the adoption score as the income level increases. The co-efficient of correlation also indicates a positive correlation between the two.

Table 20

Village	'r' Value
A	.3931*
B	.5875*

*Significant at .01 level of probability.

The co-efficient of correlation is significant in both the villages at .01 level of probability, indicating a positive correlation between the income levels and adoption (Table 20).

Land Holding

Farm size has been consistently found to be positively corelated with adoption. It was observed that farmers with larger holdings opt for more practices

than those having small or very small holdings. Even a cursory glance at the distribution of average adoption score according to the land holding level (Table 21) would reveal that there is a steep rise in the adoption score with the increase in the farm size. The only

Table 21

Distribution of Average Adoption Score at Different Levels of Land Holdings

Land Holding in Canals (8canals= 1 acre)	Average Adoption Score	
	Village A	Village B
Up to 5	2.40	1.00
6 - 10	3.00	1.81
11 - 20	4.26	2.42
21 - 30	3.54	2.70
31 - 40	5.00	3.12
41 - 50	5.00	3.50

exception is the holdings between 21-30 canals in Village A, where it indicates a fall in the average adoption score. This may be because sometimes the farmers feel satisfied with their produce and they lose interest to go in for more practices. The Table also indicates the difference in the average adoption scores between the two villages. In Village A, the

adoption score for 6-10 canals land group is better than that of 21-30 canals land group in Village B. Similarly average adoption Score of 41-50 canals land group in Village B is less than that of 11-20 canals group of Village A.

Table 22

Village	'r' Value
A	.295*
B	.377*

* Significant at .01 level.

The co-efficient of correlations between the two variables in both the villages were found to be significant at .01 level (Table 22). This proves that there is a positive correlation between the size of the farm and adoption of improved practices.

Occupation

Farmers were the main focus of attention in this study. But as mentioned earlier that the farmer of Kashmir now no longer limits his activities to only farming but has extended his activities to subsidiary occupations too. Though the farmers may be basically agriculturists, they substantiate their income from some subsidiary occupations, with the rise

in their economic level, they are in a better position to invest in farming for its development. For this study the respondents were divided into four categories, viz. exclusive farmers, farm and business, farm and service, and farm and others, e.g. labourers and artisans. It was desired to examine the level of adoption in each occupational category. In addition, also, to examine the shift from traditional occupations and its impact on the levels of adoption. The data indicating the relationship between the shift of occupations and the adoption score are presented in Table 23:

Table 23

Change from Traditional Occupation

Adoption Level	Change from Traditional Occupation (Percentage)			
	Village A		Village B	
	Yes	No	Yes	No
Low (0-3)	21.00	13.00	48.00	30.00
High (4-6)	8.00	58.00	3.00	19.00

This shows that in Village A the respondents who have not changed their traditional occupation are 21% and 8% at the low and high adoption level respectively. The frequency is 13% and 58% at the low

and high level of adoption for those who have taken a shift from traditional occupation or have combined some subsidiary occupation with it. Contrary to this in Village B, there are 48% and 3% respondents at the low and high level of adoption respectively, who are still attached with their traditional occupation, and 30% and 19% at the low and high level of adoption respectively who have gone for some subsidiary occupation.

The Table reveals that those who are no longer attached to their traditional occupation have a higher level of adoption compared to those who are still adhered to traditional occupasions only. When the Chi-square test was applied, it gave the following results (Table 24):

Table 24

Village	Chi-square value
A	24.18*
B	15.31*

* Significant at .01 level.

The association between the two variable was found significant at .01 level, which proves that change from traditional occupations are associated with the level of adoption (Table 24).

The sample farmers were also divided according to occupational category in relation to level of adoption as given in Table 25:

Table 25

Adoption Level and Occupational Category

Occupational category / Adoption level	(Percentage) Village A N = 100				(Percentage) Village B N = 100			
	Exclusive farmers	Farm and business	Farm and service	Farm and others*	Exclusive farmers	Farm and business	Farm and service	Farm and others*
Low (0-3)	11.00	7.00	6.00	8.00	33.00	21.00	8.00	17.00
High (4-6)	3.00	13.00	44.00	8.00	2.00	3.00	16.00	0.00

* Farm and others' refers to those who have combined farm with artisan or labour, etc. Their relative frequency was so low that they were clubbed together.

The analysis of the above data reveals that those who have combined farm with service have high adoption scores in both villages and those who are exclusive farmers rank lowest in adoption scores.

The reason may be that those who are in service are not only in a better position to invest in farm improvement but they are educationally better equipped thus are exposed to more new ideas.

Chi-Square test was applied to find out the significance of association between occupation and adoption (Table 26). Thus it was established that

Table 26

Village	Chi-Square value
A	24.15*
B	40.64*

* Significant at .01 level.

the association between the adoption and occupation was significant at .01 level for both the villages.

Family

In order to see how far the family type influences the acceptance of recommended practices, we included family as an important variable in this study. It is generally felt that large or extended families are not so inclined to new innovations as small size families. The reason is that larger

families find it more difficult to arrive at a decision regarding the adoption of an innovation.

In this study respondent families were classified as nucluer and joint or extended. The nucluer family represents the respondent, his spouse and any un-married off-springs living in the household. The extended family included both the vertical as well as horizontal types.. The vertical include nucluer families of two or more generations living in the same household, and the horizontal consist of two or more nucluer families of same generation sharing the household.

On the basis of the level of adoption the respondents belonging to the nucleur or joint family were classified (Table 27):

Table 27

Adoption Level and Family Type

Adoption Level	Village A N = 100		Village B N = 100	
	Nucluer	Joint/ Extended	Nucluer	Joint/ Extended
Low (0-3)	20.00	12.00	8.00	70.00
High (4-6)	41.00	27.00	13.00	9.00

It can be seen (Table 27) that nucluer families are comparatively more inclined to adopt recommended practices than joint or extended families. The results of the Chi-square applied which confirm the association between the two variables are given in the following Table:

Table 28

Village	Chi-Square value
A	.04*
B	24.83**

* Not significant

** Significant at .01 level.

The results reveal that in Village A the association between the two variables is not significant, whereas it is significant at .01 level in Village B. This may be due to the relative importance attached to the family type. Out of the total sample in village A, 61% live in nucluer families as compared to 21% in Village B as is evident in the Table in the Appendix I (Socio-Economic Tables).

Intensity of Agriculture

Apart from the socio-economic factors and their association or relationship with the adoption level, it was necessary to see as to how far cropping

pattern goes along with the level of adoption. It is generally observed that if a farmer goes for double cropping, he is more inclined towards adoption. On the basis of the data collected (Table 29): it was found that in Village A there are 11% respondents

Table 29

Intensity of Agriculture and Adoption Level

Intensity of Agriculture / Adoption Level	Village A (Percentage)		Village B (Percentage)	
	Single	Double	Single	Double
Low (0-3)	11.00	21.00	39.00	39.00
High (4-6)	2.00	66.00	4.00	18.00

under low adoption level who have single cropping systems compared to 39% in Village B. On the other hand those who have high level of adoption are 2% and 4% in Villages A and B respectively. There are 21% respondents under low level adoption with double cropping system in Village A compared to 39% in Village B. But there are 66% respondents having high adoption score under double cropping compared to 18% in Village B.

The analysis also shows that there is rise in the adoption level when the farmer proceeds from single to double cropping. It also reveals the differences between the two villages in their cropping patterns and the levels of adoption. When Chi-square test was applied, following results were obtained:

Table 30

Village	Chi-square value
A	18.69*
B	8.18*

* Significant at .01 level.

The association is significant at .01 level of probability in both the villages. It confirms the association between the intensity of agriculture and adoption.

The overall analysis presented in this Chapter reveals that the personal or socio-economic factors are significantly correlated or associated with adoption levels. Young farmers are credited with higher adoption scores than medium age or old age group. Although the importance of education at certain levels seems to be relatively less in relation to adoption in Village A, because of the various

opportunities and incentives available to them, than Village B. On the whole the educational level of the respondents is positively correlated with the adoption in both the villages. Adoption score also goes up as the income level increases in both the villages.

There is a strong and positive correlation between the size of holding and adoption. Those farmers who combine farming with service are credited with higher adoption score. Nucluer families are comparatively more inclined to adoption than the joint or extended ones. Although their association is not established in Village A, it is significant in Village B. This is due to the relative importance attached to the family type.

Apart from the above mentioned factors change from traditional occupation and intensity of agriculture were also found significantly associated with adoption level of the farmers.

CHAPTER VIII

Barriers to Adoption

The adoption process involves decision making on the part of the farmers, which not only takes into account soci-economic factors associated with the individual farmers but also include those which are either connected with the innovation or the situation in which the farmer is placed. The socio-economic factors have already been discussed earlier. In this Chapter an attempt has been made to find out the other factors/reasons which retard or accelerate the process of adoption, as reflected by the respondents.

Improved Implements

The adoption of improved implements goes along with the adoption of other modern inputs. The reasons advanced by the farmers of both the villages which make them adopt improved implements are that of economy and convenience, etc. (Table 31):

Table 31

Reasons for Using Improved Implements

Reasons	Village A Percentage N=80	Village B Percentage N=32	Total N =112
Convenience and Practical Utility	65.00	43.75	58.93
Economic	35.00	56.25	41.07
Total	100.00	100.00	100.00

Thus in Village A, it is the convenience and practical utility of the innovation which plays an important role, while in Village B the economic advantage of the innovation ranks high.

The reasons advanced by the farmers of both the villages for non-adoption are also two as given in the Table 32:

Table 32

Reasons for not Using Improved Implements

Reasons	Village A Percentage N = 20	Village B Percentage N = 68	Total N = 88
Unfavourable geographical conditions/small holdings	55.00	52.94	53.41
High Price/Non-availability	45.00	47.06	46.59
Total	100.00	100.00	100.00

In both the villages unfavourable geographical conditions and small holdings (53.41%) serve as a major barrier which is quite natural, as compared to High price or non-availability (46.59%) of the inputs required for the very innovation. This undulating topography has given way to small holdings which are also not consolidated at one place. As a consequence it is difficult to use the innovations like a tractor. Those who mentioned High price or Non-availability of inputs felt that the tractor was not available all the time and on account of low income, even when it was available, they were not in a position to procure these. They also expressed that Shalimar plough which is an improved plough designed by a local Government workshop was also not economical for them and was not available all the time. Added to this, there is no facility to get it repaired in the village itself whereas they could repair their traditional ploughs themselves.

Fertilizers

High-yield was the main reason for the use of the fertilizer, according to the majority of the respondents in both the villages (Table 33):

Table 33

Reasons for Using Chemical Fertilizers

Reasons	Percentage		Total
	Village A N=90	VillageB N=73	N =163
High Yield	53.33	72.60	61.96
Profitable	5.56	-	3.07
Both	41.11	27.40	34.97
TOTAL	100.00	100.00	100.00

The lowest percentage was of those who advocated profitability as the reason for using fertilizer. This shows that farmers were more impressed by high yield than profitability, perhaps because their holdings are generally small, and farmers are interested to get the best out of these. The education of profitability concerned those who had relatively large holdings and were interested to make money out of it.

Table 34

Reasons for not using Chemical Fertilizers

Reason	Percentage		Total
	Village A N = 10	Village B N = 27	N= 37
Non-aVailability	100.00	100.00	100.00
High Price	90.00	92.59	91.89
Use of Chemical Fertilizer is Harmful	-	7.40	5.40

With a view to ascertain the reasons which stand in way of use of chemical fertilizers a multi-purpose question was designed and respondents were free to give any number of reasons they liked. Hence respondents have given more than one reason.

Non-availability of fertilizers stands as the main reason for not using fertilizer, which is followed by high price (Table 34). The reason that use of chemical fertilizer is harmful for health was mentioned by some respondents of Village B only. The reason for this is that they did not perceive the innovation in the right perspective and were still thinking in the traditional terms. The analysis in general shows that shortage and high price were the main reasons for not using fertilizers.

Insecticides and Pesticides

The agro-chemicals have been used more by the Village A (70%) than village B (13%). The reasons mentioned for the use of pesticides and insecticides by the respondents of both the villages have been compiled in the Table 35:

Table 35

Reasons for Using Agro-Chemicals

Reasons	Percentage		Total
	Village A N = 70	Village B N = 13	N = 83
High Yield	61.43	76.92	63.85
Profitable	5.71	-	4.83
Improvement in quality	21.43	23.08	21.68
Any other	11.43	-	9.64
Total	100.00	100.00	100.00

The data in the table reveals that high yield was again the main reason in both the villages for motivating them to use insecticides and pesticides. Next important reason for its use was improvement in quality. This is followed by the answer that 'others use it that is why they were also using it', and because 'they were told by the village elders', etc. Such respondents were relatively small in number and therefore have been grouped together under 'Any Other'. There was still another reason given by the respondents who mentioned that they adopted it just for the sake of profitability (4.83%).

In order to understand the reasons for not using the agro-chemicals by the farmers inboth the villages help was taken from a multi-choice question where the respondents were free to mention more than one reason. The intention in doing so was to probe deep to pinpoint the barriers to adoption. This exercise could show that high price of the innovation is the most important factor indicated by the respondents. It is mentioned by 83.87% of the non-adoptors of Village A and 91.95% of Village B (Table 36):

Table 36

Reasons for not using Agro-Chemicals

Reasons	Percentages		Total N=118
	Village A N = 31	Village B N = 87	
High Price	83.87	91.95	89.83
Involves complex procedure	45.16	59.97	55.93
Non-availability	61.29	39.09	44.91
Makes no difference	-	8.04	5.93

It is followed by complexity of the innovation (55.93%) as the reason for non-adoption. They felt that the use of insecticides and pesticides involves a complex procedure, of handling sprayer, mixing the ingredients properly etc. This reason was generally mentioned by those who had low level of education and were not in a position to perceive innovation in its right perspective besides the lack of proper educational approach on the part of extension agency, thus complicating the problem further. Non-availability of the chemicals was the third reason in order of priority mentioned by the non-adoptors of both the villages (41.91%). 8.04 % of the non-adoptors of Village B mentioned that use of pesticides and insecticides made no difference.

Improved seeds

The reasons putforth by the adoptors of both the villages for using improved seeds are high yield, profitable or both (Table 37):

Table 37

Reasons for Using Improved Seeds

Reasons	Percentages		Total
	Village A N=85	Village B N = 70	N=155
High Yield	60.00	80.00	69.03
Profitable	7.06	-	3.88
Both	32.94	20.00	27.09
Total	100.00	100.00	100.00

High yield was advanced as the main reason by the adoptors of village A (60%) and Village B (80%). 32.94% of Village A and 20% of Village B have mentioned, both high yield and profitability as the reasons for adoption of improved seeds. Only 7.06% adoptors of Village A mentioned profitability as the reason. Considering both the villages together, high yield (69.03%) stands as the main reason.

The reasons putforth by the non-adoptors of both the villages for a multichoice question for not using the innovation are presented in Table 38.

Table 38

Reasons for not Using Improved Seeds

Reasons	Percentage		Total N= 45
	Village A N = 14	Village B N = 31	
Own seeds better	64.28	29.03	40.00
Others*	21.43	41.93	35.55
Non-availability	7.14	19.35	15.55
High Price	7.14	6.45	6.67

* Various reasons such as disinterest, lack of knowledge, unprofitability were advanced, as their individual percentage was low, they were grouped together.

Considering both villages together as reflected in Table 38, it was found that the reason 'own seeds better' ranks highest (40%) followed by 'other' reasons (35.5%), non-availability (15.55%) and high price (6.67%). As mentioned in the foregoing chapter, the improved variety has shedding characteristic and matures two to three weeks later than the local variety, hence the farmer sometime prefers to go for the old local variety. On the whole the data indicates that 'own seeds better' stands as the major reason and high price as the minor reason for non-adoption of improved seeds.

Improved Livestock

Very few people in both villages have gone for improve live-stock. The reasons advanced for that are shown in the Table below:

Table 39

Possession of Improved Live-stock

Reasons	Percentage		Total
	Village A N = 15	Village B N = 5	N =20
For better quality	80.00	20.00	65.00
Others*	20.00	80.00	35.00
Total	100.00	100.00	100.00

* Other refers to the reasons like persuation by extension agents, profitability, prestigious etc.

Out of 15 adoptors of Village A, 80% have mentioned that they adopted improved livestock because of better quality. 20% of them mentioned other reasons like strong persuasion by extension agents, or it is prestigious to keep improved breeds. On the other hand in Village B out of 5 adoptors one mentioned better quality and the remaining four as other reasons. In general better quality ranks highest (65%) followed by others (35%) as the reasons for adoption of improved livestock.

Majority of the respondents from both the village have not gone for improved livestock. The reasons against a multiple-choice question are given Table 40):

Table 40

Reasons for Non-Possession of Improved Live-stock

Reasons	Percentage		Total
	Village A N = 85	Village B N = 95	N=180
Unfavourable geographical conditions	52.94	29.47	40.55
Technical difficulties	49.41	26.31	37.22
Disinterest	7.06	42.10	25.55
Others*	9.41	10.52	10.00

* Others refer to inadequate knowledge of extension agents, high price and lack of persuation etc.

Unfavourable geographical conditions were mentioned by 52.94% of the non-adoptors in Village A. Other reasons mentioned for the same were technical, disinterest and others.

In Village B, majority of the non-adoptors advanced disinterest followed by unfavourable geographical conditions, technical reasons and others.

Considering both villages together unfavourable geographical conditions (40.55%) stands as the major reason followed by technical difficulties, disinterest and others.

In fact when new breeds were introduced in the valley at large as well as in the villages under study, their geo-genotypic characters became dormant because of ill-feeding and they could not resist severe cold in the winter. At the same time, artificial insemination could not succeed as the local breed could not withstand it because of technical reasons. The local breed was small in size and when they were inseminated, they fail to resist at the time of delivery. Thus farmers were not convinced with the improved livestock.

The overall picture reveals that it is convenience and practical utility more than economic reasons which motivate farmers to accept modern agricultural implements. Whereas, unfavourable geographical conditions and small holding rather than high price, serve as main barrier to its adoption.

In case of fertilizer, it is high yield which accelerates the rate of adoption than others, whereas non-availability and high price serve as the main barriers to the adoption of fertilizers.

High yield again stands as the main factor for adoption of insecticides and pesticides. However, high prices, complexity and non-availability are main barriers in order of priority.

In case of seeds, high yield is again advanced as the main factors for adoption, followed by the disqualities of improved seed, shedding and late maturing; disinterest, lack of knowledge and non-availability serve as the barriers to its adoption.

The desire to have better quality followed by persuasion etc. can be accounted as the main reason for adoption. Contrary to it, unfavourable geographical conditions, technical difficulties and disinterest act as barriers to the possession of improved livestock.

CHAPTER IX

MOBILITY AND MEDIA EXPOSURE AND ADOPTION

Mobility

It is a process by which an individual is exposed to the outside world apart from his own community. As a factor of communication, it enables a person not only to observe things outside his own community but also to interact with people who have different habits, attitudes, values and practices. This experience of exposing one's self to a wider area of human activity as well as interacting with people other than those whom one knows intimately leads to an increase in knowledge and widening of horizons.

The cumulative effect of increasing mobility of an exposure to attractive opportunities else where, of the feed back that comes in to the community from those who have moved on temporarily accepted jobs in a nearby city gives a general feeling of self-confidence. No sooner the total dependence on family and immediate community is given up, one is led by stages and very slow stages to independent entrepreneurship. The stage of reliance on the Government may even be bypassed.

With this background, it was desired to measure the degree of mobility of the farmers of two villages under study and to find out its association or relationship, with the adoption behaviour of the farmers. It was observed that more farmers of Village A compared to Village B used to frequently visit the nearest city, town and places outside the State, because of the fact, that village A is situated on the main road, which facilitates their movement compared to Village B. This course of interaction, and in meeting their other needs brought to their attention the opportunities available in the city, town or outside the State. Some of them visit places outside the State generally during the winter, when there are less opportunities of work at home, they work there for few months and return at the time of the farming season. They are exposed to new ideas and thinking. At the same time they earn substantially more than those who merely spend winter idle in their houses. Moreover, they have played a major role in transforming the thinking process of the villagers. In this way, mobility not only helps to get exposed to new ideas and widening of horizons of knowledge but also to improve the economic condition, thus brings the villagers in a better position to invest for improvements.

In the present study the mobility of the villagers is measured by their monthly visits outside village, yearly visits outside the state, monthly visits to nearest city and interaction with people from outside the village. The information collected was classified as low, medium and high mobility. The average adoption score was calculated for each level of mobility in both the villages. The results are shown in the following table:

Table 41

Average Adoption Score for Different Levels of Mobility

Mobility Score	Average Adoption Score	
	Village A	Village B
Low (0-4)	1.90	1.5
Medium (5-9)	4.0	2.7
High (10-14)	5.1	3.2

It is evident from the above Table that as the mobility score increases, the average adoption score also goes up. In Village A, the average adoption score is increased to 4.0 for the Medium mobility compared to 1.90 for the Low mobility. In Village B it has not increased so fast as is evident. There is 2.7 average adoption score for Medium mobility compared

to 1.5 average score for adoption for Low mobility. Under the high level of mobility, the average adoption is 5.1 in Village A against 3.2 in Village B.

The analysis of the data on the table not only reveals the increase of adoption score along with the increase in the mobility level, but also differentiate the two villages with regard to their average adoption score.

In order to validate this relationship, coefficient of correlation test was applied (Table32):

Table 42

Village	'r' value
A	.817*
B	.750*

* Significant at .01 level.

Thus, the results confirm our statement that mobility is positively related with the adoption index, as in both the villages it is highly significant (at .01 level of probability).

Media Exposure

Media exposure in the form of communication of news, information on agricultural and other matter, propaganda and entertainment has become highly institutionalized. The extent of coverage of mass media like radio, television, newspapers, magazines and other printed materials - varies with general technological advancement and with the education level. The relatively low cost of the mass media especially of radio as a way of disseminating information has led to the conclusion that this should be the primary means used by development agencies. The news paper has long been recognised as a means of keeping people informed about local and outside events, it also serves as an aid to other agencies of communication. Radio and more recently the television are considered important in disseminating information on change in rural society. Interviews with experts, demonstration of new practices on television, recreation, home forums and the like appeared to have high interest value. The relating of local experiences with new practices and enterprises have more appeal than the report of an experiment.

Today most of the Kahmeri farmers have radio sets and most of the villages have television, at least one in the panchayat building or school. The

newspapers are also equally flown in, which shows the mass communication facilities are available in rural Kashmir.

With this background, it was desired to measure the degree of media exposure of farmers of the two villages under study and to find out its association or relationship with the adoption behaviour of the farmers. The degree of exposure was measured in terms of exposure to newspaper, radio, television and movies. The data collected was scored and classified into low, medium and high level of media exposure. The average adoption score was calculated for the respondents lying in each category. The findings are given in the following table:

Table 43

Average Adoption Score for Different Levels of Media Exposure

Media exposure score	Average Adoption Score	
	Village A	Village B
Low (0-5)	2.21	1.66
Medium (6-10)	3.34	3.30
High (11-16)	4.72	4.00

The table shows that those having less exposure to mass media had the average adoption score of 2.21 in Village A compared to 1.66 in Village B. Similarly for the medium exposed respondents, the score for Village A was 3.34 compared to 3.30 for Village B. This is followed by 4.72 average adoption score for high media exposure level in Village A compared to 4.00 in Village B. This indicates the steady rise of average adoption score as Media exposure goes high. At the same time, it reveals the difference in average adoption scores in two villages against different levels of media exposure, Village A has a higher average adoption score at all levels of Media exposure than Village B. The co-efficient of correlation test was applied between the Media exposure variable and adoption and the results obtained is that the correlation is significant at .01 level of probability in both the villages (Table 44):

Table 44

Village	'r' value
A	.728*
B	.467*

* Significant at .01 level.

Thus it confirms the statement that degree of Media

exposure is positively co-rrelated with the degree of adoption.

In order to probe a little deep, it was desired to know farmers preferences for various programmes on radio and television, their knowledge about agricultural programmes, regular listening and its usefulness.

Accordingly, a multi-choice question was asked and respondents were free to give any number of responses. The results have been compiled in Table 45 which speaks for itself.

Table 45

Programme Preferences of the T.V.audience

Programme	Percentage of Respondents who preferred the programmes	
	Village A N=97	Village B N=12
Agricultural and related	51.54	58.33
Music/Songs	41.23	50.00
News, etc.	36.08	41.66

In case of the programmes broadcast on Radio, the respondents from Village A preferred

agricultural and related programmes (87%) followed by news programmes (52.%) and music/song programmes (50%) respectively (Table 46). The respondents from Village B also preferred agricultural and related

Table 46

Programme Preferences of the Radio Listeners

Programmes	Percentage	
	Village A N=100	Village B N=99
Agricultural and related	87.00	55.55
Music/Songs	50.00	53.53
News, etc.	52.00	50.50

programmes (55.55%). But the second preferred programmes in Village B was music/songs (53.53%) followed by news programmes (50.50%). The respondents from Village A seem to be very much interested to know about the happenings around the State and the country. This is less in the case of Village B where songs and music ranks second (53.53%) which reveals their inclination towards entertainment rather than happenings around.

In this study we were more concerned with agricultural development and its subsequent effects,

hence it was desirable to probe more for the programmes related to agriculture. Hence, farmers opinions were asked about their knowledge of agricultural programme on radio and television, their frequency of listening and at the end, its usefulness as perceived by the farmers.

It is evident from Table 47 that in Village A all the respondents had the knowledge about

Table 47

Knowledge of Agricultural Programmes on Radio and T.V.

Knowledge	Percentage	
	Village A N=100	Village B N=100
No	-	5.00
Yes	100	95.00

the farmers programmes broadcast or telecast compared to 95% of sample respondents from Village B.

In case of regular listening of these programmes it can be seen from Table 48 that 20% of Village A respondents did not listen to the programmes regularly compared to 52.73% of Village B. After

Table 48

Listening of Agricultural Programmes on Radio and T.V.

Listening	Percentage	
	Village A N=100	Village B N=95
No	20.00	52.63
Yes	80.00	47.37
Total	100.00	100.00

little probing the reasons advanced by those 20% farmers of Village A, were either they don't get time or they dont have radio sets in their homes. For television they have to go to the high school building in the village where it is installed, which is not convenient all the time especially when the farmer comes back from the field after a day's hard labour. The reasons advanced by 52.63% farmers of Village B were that, mostly they don't have radio sets, and lack of interest. For the television they have to go to the other village about 1½ km. away.

In Village A 80% against 47.36% of Village B listen to these programmes regularly. Coming to their perception about the programmes more than one-

third of the respondents of Village A perceived that the agricultural programme provides knowledge about the latest developments in agriculture (Table 49). On the other hand about one-third of the respondents of

Table 49

Perception of Audience About Agricultural Programmes

Item	Percentage	
	Village A N = 80	Village B N = 45
Knowledge about latest development	33.75	11.11
Improve knowledge about agriculture	21.25	22.22
All above	25.00	6.67
Not useful	8.75	31.11
Not mentioned	11.25	28.89
Total	100.00	100.00

village B were of the opinion that the programmes were useless for them (31.11%). Another 46.25% respondents of Village A considered the programmes useful as these programmes improved their knowledge in agriculture or in the lastest technology, whereas the percentage of such respondents was 28.89 in Village B. Only a small

percent of villagers did not find the programmes of any use whereas there were a few who did not have any view to express.

The analysis reveals that the farmers of Village A perceived the farmers programme correctly as compared to the farmers of Village B.

The overall analysis brings into focus that Mobility and Media exposure are positively correlated with the adoption behaviour of the farmers. It further points out that the farmers of village A as compared to Village B had positive perception regarding the programmes meant for agricultural development and it had the bearing on their adoption behaviour.

CHAPTER X

OFFICIAL, NON-OFFICIAL CONTACT AND ADOPTION

It is observed by some scholars that the change agents both official and non-official play an important role in any programme of planned change. Hence it would seem logical that in farm communities they would also promote the adoption of agricultural innovations.

About 37 lakhs of rural population of the Stat habit 6,749 villages in 68 blocks. When the Comm y Development programme was started in 1952, a e cadre of change agents was built up both at block level as well as village level. Since then, at the village level, the Panchayats, the lowest and the basic unit of Self-Covernment, were considered to be the most important instrument for enlisting people's participation. The Village Panchayats also serve as a basic unit for the execution of development activites.

Next to the Village Panchayat the Block organisation is an important unit of development administration. It has made the services of the

Government easily accessible to the people. It serves as an agency of close continuous interaction between the village people and the Government.

Under these circumstances, it was desirable to know the respondents knowledge and degree of contact with the officials and non-officials at these two levels as well as at the district level and to study its impact on their adoption behaviour. Respondents knowledge and contacts were studied for the officials like BDO, Extension Officers, District Panchayat Officer, V.L.W., Doctor and District Agricultural Officers. Non-officials include Sarpanch of the Panchayat, M.L.As and M.P. The responses received about their knowledge and contact with officials and non-officials were subjected to scoring method and their relation with their adoption behaviour was worked. Out the responses regarding their knowledge of officials and non-officials in relation to the adoption when tabulated (Table 50) made it clear that higher the degree of awareness, higher is the average adoption score. The average adoption score for those who had low knowledge of officials and non-officials in Village A was 2.43 as compared to 1.88 in Village B. There is a sharp rise in average

Table 50

Average adoption Score at Different Levels of Awareness about official and non-official contact

Degree of Awareness	Average Adoption Size	
	Village A N = 100	Village B N = 98
Low (Upto 12)	2.43	1.88
Medium (13-24)	4.11	3.06
High (25-36)	4.71	4.22

adoption scores in both the villages at medium level of awareness. From the medium level of awareness to the high level of awareness, it further increases in both the villages at high level of awareness (4.71 and 4.22 in Village A and Village B respectively). Overall picture reveals that adoption behaviour of the farmers is influenced by the degree of awareness of the officials and non-officials.

The degree of official and non-official contact of the respondents and its relation with adoption were also studied.

Table 51

Average Adoption Score at Different Levels of Contact with Officials and Non-Officials

Degree of Contact	Average Adoption Score	
	Village A	Village B
Low (Upto 12)	3.20	2.10
Medium (13-24)	3.92	2.81
High (25-36)	4.86	2.90

It was made clear that there is a gradual increase in the average adoption score of both the villages from the low level of contact to high level of contact with officials and non-officials (Table 51). Further, Village A has got comparatively high average adoption score at all levels of contact than village B. In Village A, against the low level of contact, the average adoption score was 3.20 compared to 2.10 in Village B. At medium level of contact, it was 3.92 in village A against 2.81 in Village B. Similarly at high level of contact, the average adoption score was 4.86 in Village A and 2.90 in Village B.

Both, degree of knowledge as well as degree of contact scores were put together to calculate the zero-order correlation between the degree of knowledge/contact and adoption score (Table 52):

Table 52

Village	'r' value
A	.575*
B	.703*

* Significant at .01 level of probability

Here, the values of 'r' indicate that the degree of knowledge and contact is positively related with the adoption behaviour of the farmers (significant at .01 level of probability) in both the villages. This confirms that there is a positive correlation between the two variables under study.

In order to make it more meaningful, it was necessary to know the purpose of their contact and result. Accordingly, questions were framed, and the data were collected. (Table 53):

Table 53

Percentage Distribution of Respondents for Purpose of Official and Non-Official Contact

Purpose	Percentage	
	Village A N=91*	Village B N=78*
Agriculture and related	54.94	38.46
Community affairs	10.49	15.83
Personal Matters	34.57	45.71
Total	100.00	100.00

* N refers to the exclusion of those who have not mentioned any purpose.

The main purpose of contact mentioned by the Village A respondents was agriculture and related matters (54.94%) followed by personal matters (34.57%) and community affairs (10.49%) respectively. On the other hand the respondents of Village B mentioned personal matters as the main purpose of contact with officials/non-officials (45.71%) followed by agriculture and related matters (38.46%) and community affairs (15.83%) respectively.

On the whole, the analysis reveals that in village A people used to meet the officials/non-officials for agricultural and related matters, while in Village B they used to meet for their personal reasons. The second most important purpose were personal matters in Village A and Agriculture and related matters in Village B.

Table 54

Perception About the Results of Contact

Result	Percentage	
	Village A N = 91	Village B N = 78
Not helpful	16.48	38.46
Helpful	43.96	20.51
Can't say	39.56	41.03
Total	100.00	100.00

The Table 54 shows that majority of the respondents in Village A perceive that officials and non-officials are helpful. The next higher percentage is of those who could not give any opinion. Only a minor percentage was of the view that they were not helpful. Compared to this in Village B, majority of respondents could not give any opinion. It was followed by those who thought that contact was not helpful. The analysis reveals that in Village A relatively good percentage perceived the contact as helpful followed by the uncertainty group. While in Village B, the uncertainty group ranks highest followed by those who perceived as not helpful.

The overall analysis reveals that the degree of awareness of the respondents about the officials and non-officials as well as contact with them has got a positive bearing on the adoption behaviour of the farmers. Agricultural matters were the main purpose of contact in Village A while in Village B, personal matters ranked high. Regarding the result of contact, it has been largely helpful in Village A followed by uncertainty, while in Village B, uncertainty prevails much, closely followed by 'not-helpful'.

CHAPTER XI

SOCIAL IMPLICATIONS OF MODERN AGRICULTURAL TECHNIQUES

The means by which agricultural innovations are brought to the attention of the farmers and the process by which farmers accept them have been discussed in the preceding chapters. The present discussion contains the implications of such changes on the social life of the farmers.

There are several factors responsible in bringing about changes in rural society and generally, it is impossible to segregate the influence of any individual factor but the fact remains that all the factors work together towards increasing use of technology which is related to rural social change.

The introduction of technological innovations in agriculture and the maximised use of inputs, for production, resultant rise in agricultural output, subsequently higher income of the farmers affects their levels of living and aspirations. The rapid technological development and their adoption by the farmers tend to revolutionise their economic and social life. Thus the adoption of agricultural innovations brings about changes in both technological and non-technological

aspects of social life. As 'W.F.Ogburn', in 'On Culture and Social Change' (1968) points out that, 'A very common pattern of social change is to effect first on economic organisations, which causes a change in some social institutions, such as family or government, and which finally causes a change in the social philosophy of people'.

Because of the great importance of social institutions, the influence of technology on rural social institutions is of great significance in rural social change. The present study is concerned with the examination of the social implications with special reference to change in social institutions as a result of adoption of modern agricultural technology. The main focus will be on the changes in some of the aspects of: family, marriage, religion or educational and few other institutions. The institution of caste is not as such included as it has least relevance with the present field of study (reasons discussed earlier), however, the religiosity variable has been included in this study. Some of the aspects of the various social institutions of both the villages which have undergone change are discussed as under.

Religiosity

Generally scholars study caste system under the social institutions in India. As mentioned earlier, the two villages under study are predominantly Muslim, thus the discussion of caste system was not of any importance. In the recent past, some scholars started thinking on the lines of caste system among Muslims also, but as it has no rational basis or religious sanction, it seems very difficult to treat it as a variable and ascertain its relevance with others. At the same time as far as religious affiliation is concerned, it has some relevance to social change. This is supported by 'Max Weber' who treats religion as an important factor for social change in his famous work "The Protestant Ethic and the spirit of Capitalism". With this background it was desired to know the relative importance which the adoption behaviour has with the degree of religiosity of the farmers. In this study the degree of religiosity was measured in terms of the importance which the farmers attach to religion, the extent to which they are guided by religion in their daily life, and their daily frequency of visits to shrines.

The respondents were asked to mention the importance which they attach to the religion in their daily life. The responses were classified into: very important, important and important to some extent. The low and high adoption level was calculated for the respondents belonging to each of these categories (Table 55).

Table 55

Percentage Distribution of Importance Attached to Religion at Different Levels of Adoption

Adoption Level	Village A (Percentage)			Village B (Percentage)		
	Very Important	Important	Important to some extent	Very Important	Important	Important to some extent
Low (0-3)	26.00	6.00	-	67.00	11.00	-
High (4-6)	9.00	59.00	-	10.00	12.00	-

The above table reveals that all the respondents of both the villages either treat religion as very important or at the most 'important', in their daily life. There is not a single respondent who treats religion as 'important to some extent'. However, within these two categories the adoption level shows variations. In Village A, 26% of respondents under low level adoption

treats religion as very important as compared to 67% respondents in Village B. There are 6% respondents under low level of adoption in Village A, who treat religion as important against 11% in Village B. Under high level of adoption 9% and 59% of respondents of Village A treat religion as very important and important respectively whereas these figures come to 10% and 12% in Village B respectively. It shows that the adoption level of the farmers has a negative affect on the degree of their religiosity.

The respondents were also asked to mention the opinion as to how much they are being guided by the religion in daily routine of work. The information collected was subjected to tabulation in relation to adoption level for each category response which reveals that the responses in Village A has spread to three categories, while in Village B, it is limited to two (Table 56). There are 25% and 51% of respondents respectively in Village A and Village B under low level of adoption who are very much guided by religion in their daily life. Another 7% and 27% in Village A and Village B respectively mentioned only guided. Under high level of adoption only 4% of Village A and 2% of Village B

TABLE 56

Percentage Distribution of Guidance by Religion at Different Levels of Adoption

Adoption Level	Village A (Percentage)			Village B (Percentage)		
	Very Much Guided	Guided	Guided to Some Extent	Very Much Guided	Guided	Guided to Some Extent
Low (0-3)	25.00	7.00	-	51.00	27.00	-
High (4-6)	4.00	60.00	4.00	2.00	20.00	-

respondents are very much guided by religion. 60% in Village A and 20% in Village B were guided. 4% of respondents in Village A under high level adoption were guided to some extent by the religion in their daily life.

On the whole the trend seems to be, lesser the guidance from the religion, the adoption level of farmers increases. At the same time Village A shows overall higher percentage of respondents under high level adoption than Village B.

The responses about their frequency of visits to the place of worship in relation to adoption level has been tabulated (Table 57):

Table 57

Percentage Distribution of Frequency of Visits to Place of Worship at Different Levels of Adoption

Adoption Level	Village A (Percentage)			Village B (Percentage)		
	5 Times a day	3 Times a day	Once a day	5 Times a day	3 Times a day	Once a day
Low (0-3)	20.00	8.00	4.00	30.00	40.00	8.00
High (4-6)	4.00	23.00	41.00	2.00	5.00	15.00

This shows that those who had low adoption level used to visit the place of worship more frequently as compared to those who had high adoption level. At the same time the difference between the percentage of respondents under adoption level of the two villages is also clear. In Village A, 20%, 8% and 4% respondents under low adoption level, compared to 30%, 40% and 8% in Village B used to visit place of worship, five times, three times and once a day respectively. Against this, 4%, 23% and 41% respondents in Village A compared to 2%, 5% and 15% of Village B, under high level of adoption used to visit the place of worship, five times, three times and once a day respectively. On the whole it reveals that the higher the adoption level, lesser the frequency of visits to the place of worship.

As regards the frequency of visits to shrines the analysis (Table 58) makes it clear. It shows percentage of respondents goes on decreasing under low adoption level as the frequency of visits to shrines decreases whereas percentage of respondents increases under high level of adoption to a certain limit as the frequency of visits to shrines decreases. It also shows an abrupt increase in percentage from 11% to 39% under high level in

Village A, for those who visit once a day to those who visit once a week.

Table 58

Percentage Distribution of Frequency of Visits to Shrines at Different Levels of Adoption

Adoption Level	Village A (Percentage)				Village B (Percentage)			
	Twice a day	Once a day	Once a week	Once a year	Twice a day	Once a day	Once a week	Once a year
Low (0-3)	13.00	16.00	3.00	2.00	44.00	33.00	1.00	-
High (4-6)	6.00	11.00	39.00	10.00	3.00	14.00	5.00	-

In fact, in most of the villages of the valley, there are shrines of some or the other Saintly person, so much so that valley was called by some, as the Valley of Shrines. The people have the habit of visiting the shrines very frequently. The farmers in the villages are more inclined to visit these before leaving for the field, and pay a return visit after completing the work in the evening. It has resulted into a belief requesting at the shrine for help, which is however not allowed by the religion. This type of belief is the result of traditional thinking. Those who are still attached to this thinking become

reluctant to change. This type of tendency is generally found among frequent visitors. This is evident from the above Table, which reveals that adoption level increases from more frequent visits to less frequent visits category and vice versa.

We tried to confirm these relationships by applying the co-efficient of correlation test of all the variables of religiosity and adoption. The result works out to higher the adoption level, the lesser the degree of religiosity and vice versa (Table 59). It confirms our statement that the degree of religiosity is negatively correlated with the adoption behaviour of farmers.

Table 59

Village	'r' value
A	- .668*
B	- .401*

* Significant at .01 level of probability.

Family

The Family is the basic social institution. Since times immemorial, the joint family system has been one of the characteristics of Indian

Society in general and rural social structure in particular. In the villages, in particular, the family has a strict control over the individual. During the recent years, as a result of advancement in science and technology, and its consequent impact on social structure, the joint family is on its way to disintegration. This impact is not only evident in the urban areas but has crept into rural social structure too, where the joint family system was having a strong hold. In this context, the advances in agricultural technology has played an important role in changing the attitudes of the farming community towards some social institutions. Thus, it was desired to study the attitude of the farming community towards family type as a result of the adoption of modern agricultural technology.

In this context, the present study includes, the farmers preference for family type and their opinion about the responsibility of expenditure in the family.

In order to find out the degree of association between these two variables, the frequency of respondents in both types of family were brought under

the low and high adoption level separately in both the villages and then the Chi-square test was applied. The results have been worked out and tabulated (Tables 60 & 61):

Table 60

Preference for Family Type at Different Levels of Adoption

Adoption Level	Village A (Percentage)		Village B (Percentage)	
	Joint	Nucleur	Joint	Nucleur
Low (0.3)	9.00	22.00	44.00	34.00
High (4-6)	9.00	60.00	2.00	20.00

Table 61

Village	Chi-square value
A	6.921*
B	15.467*

* Significant at .01 level.

The perusal of the above tables reveals that in Village A, the percentage is same under joint family, at both levels of adoption, whereas under nucleur family, there is considerable increase in

percentage at high level adoption. This shows that change in adoption behaviour is associated with the change in attitude towards family. It is confirmed by the Chi-square test, which shows its association significant at .01 level of probability.

In Village B, the percentage of respondents have increased under high level of adoption from 2% to 20% under joint and nucleur family respectively. It has however shown a decreasing trend under low adoption in both family types. This is validated by the Chi-square test, which shows that adoption level is strongly associated with change in attitude towards family type significant at .01 level of probability.

It was also desired to know the change in attitude towards the responsibility of family expenditure. In the villages, it is generally held as joint responsibility. The question asked was "should all adult members be jointly responsible for the expenditure of the family or should all adults be responsible for their own expenditure"? (Table 62).

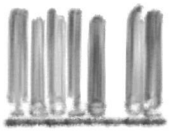

Table 62

Percentage Distribution of Attitude Towards the Responsibility of Family Expenditure

Responsibility of expenditure	Percentage	
	Village A N=100	Village B N=100
Joint	18.00	47.00
Individual	82.00	53.00
Total:	100.00	100.00

In Village A, 18% of the respondents are in favour of joint responsibility compared to 47% of Village B, whereas there are 82% respondents in Village A in favour of individual responsibility compared to 53% in Village B.

The analysis of the above data reveals that there is an increasing trend in favour of individualism in both the villages, which is stronger in Village A, than Village B, because of higher degree of inclination towards modern innovation.

Marriage

Marriage is a social institution, which gives recognition to the matrimonial relation, in establishing a family unit. Along with other social

institutions, the institution of marriage is also subjected to change due to the introduction of new ideas. This study includes, the farmers changing attitude towards some aspects of marriage institution in relation to adoption behaviour. The questions asked were limited to the changing aspects of this institution, viz., farmers reaction to marriage distance and to the decision in the selection of the spouse.

As regards the farmers reaction to the distance of marriage, in relation to adoption behaviour, it was found that under low level of adoption the percentage of respondents goes on decreasing as the distance of marriage goes on increasing. It has decreased from 16% to 5% in Village A compared to 52% to 20% in Village B (Table 63). At the same time under the high adoption level, the percentage of respondents goes on increasing as the distance of marriage increases. It has increased from 5% to 49% in Village A, compared to 4% to 10% in Village B. No one from both the villages mentioned outside the State. Where the distance of marriage has increased with adoption level the feeling was that they are in a better position now to invest on marriage outside the village or district. At the same time, they felt that they would get wider range of interaction, as they did not like to limit it to the village only.

Table 63

Percentage distribution of attitude for the distance of marriage at different levels of adoption

Adoption Level	Village A (Percentage)			Village B (Percentage)		
	Within the village	Outside the Village	Outside the District	Within the Village	Outside the Village	Outside the District
Low (0-3)	16.00	13.00	5.00	52.00	24.00	2.00
High (4-6)	5.00	12.00	49.00	4.00	8.00	10.00

Regarding the decision for the selection of spouse, the opinions expressed by the farmers of two villages against two levels of adoption taken into consideration. This reflected that the percentage of respondents goes on decreasing under low adoption. Score from complete parental control over the decision on selection of spouse to person concerned in both the villages (Table 64). At the same time percentage of respondents goes on increasing under high level of adoption from complete parental control over the decision to person concerned. The increase in percentage is from 10% to 31% in Village A compared to Village B from 5% to 10%. This reveals on the one hand, the

Table 64

Percentage distribution of opinions on the decision-making in the selection of spouse at different levels of adoption.

Adoption Level	Village A (Percentage)			Village B (Percentage)		
	Parents	Parents consultation with person concerned	Person concerned	Parents	Parents consultation with person concerned	Person concerned
Low (0-3)	19.00	9.00	6.00	65.00	12.00	1.00
High (4-6)	10.00	15.00	31.00	5.00	7.00	10.00

the difference in the levels of adoption between two villages and on the other hand the association of levels of adoption with the change in attitude towards marriage.

These two-sub-variables of marriage were put together and were subjected to co-efficient of correlation test which gave the following result: (Table 65):

Table 65

Village A	'r' Value
A	.301*
B	.272*

* Significant at .01 level.

The results were found significant at .01 level of probability in both the villages, which confirms the statement that the adoption level of the farmer is positively correlated with the change in marriage attitude and vice versa.

Education

It is accepted that lack of education though not the sole cause but is the fundamental cause of many rural problems. Being illiterate, the villagers cannot become acquainted with the latest developments in modern science and technology. Consequently they lag behind in progress. It is this illiteracy upon which ignorance and superstituions are built. In 'Principles of Social Reconstruction', 'Betrand Russel' (1954) rightly pointed out, 'In its modern form democracy is completely impossible in a country where people are unlettered'. It was perhaps for this reason that Mahatma Gandhi stressed the need

for primary education in the plan for rural development. Even if education is not a single solution of all rural problems, it is certainly an indespensable condition.

The circumstances, which the individual faces may shatter his aspirations due to which individual will be blocked by the practical circumstances to further educational aspirations. But, if the individual has understood the significance of education, would try to project this aspiration at least in the next generation. Our concern in this study refers to these reflected aspirations. The assumption was that if by the introduction of modern technology, the farmers knowledge and perception about the significance of education has increased, then to what extent, it is reflected by his adoption behaviour.

The analysis here includes, farmers opinion about education of their children and the extent of education of both in case of sons and daughters in relation to adoption behaviour. In this connection it was established, as can be seen in Table 66 that higher the adoption level higher is the educational aspirations for their children. In

Table 66

Percentage Distribution of Educational Aspirations for Their Sons at Different Levels of Adoption

Adoption Levels	Village A (Percentage)				Village B (Percentage)			
	High School	Graduate	Post Graduate	Technical *	High School	Graduate	Post Graduate	Technical *
Low (0-3)	19.00	8.00	7.00	-	38.00	36.00	4.00	-
High (4-6)	-	2.00	19.00	45.00	2.00	6.00	10.00	4.00

Village A under low adoption level, the percentage of respondents decrease from 19% to 7% as compared to Village B, from 38% to 4% from high school to post-graduation. There is not a single respondent under low level of adoption who has technical educational aspiration for their sons. At the same time under high level of adoption, in Village A it starts from graduation and percentage increase from 2% to 45% for technical education, compared to Village B, where the percentage for high school is 2% and it increases upto 10% for post graduation.

Their opinion about the educational aspirations for their daughters gives a rather gloomy picture. As high as 14% respondents under low level

and 3% under high level of adoption in Village A are not interested for the education of their daughters compared to 65% and 3% in Village B respectively (Table 67). In Village A, 10% respondents are

Table 67

Percentage distribution of educational aspirations for their daughters at different levels of adoption

Adoption Level	Village A (Percentage)				Village B (Percentage)			
	Not interested	High School	Graduate	Post Graduate	Not Interested	High School	Graduate	Post Graduate

interested to educate their daughters upto high school, 8% upto graduate and 2% upto post graduate under low level of adoption, compared to 12% for high school and 1% for graduate in Village B. Under high level of adoption, there are 25% respondents interested in education upto high school, 30% for graduate and 8% for post graduate in Village A compared to 6% for high school, 8% for graduate and 5% for post graduate in Village B. The overall picture reveals that higher the adoption level of the farmer, higher the educational aspiration for their daughters.

These educational aspirations both for daughters and sons were scored together and subjected

to co-efficient of correlation test in relation to adoption. The following results were thus obtained (Table 68):

Table 68

Village	'r' value
A	.250*
B	.204**

* Significant at .01 level

** Significant at .05 level

In both the villages, it was significant at .01 and .05 level of probability, respectively, which shows that these two variables are positively correlated with each other. Thus it confirms the statement that farmers educational aspirations for children are influenced by the adoption behaviour of the farmer, as they want to give higher education to their children.

The majority of persons in the villages are engaged in agriculture which stands as the main occupation. But as the rural areas are changing fast, it was decided to know the occupational plans which they had for their children. What occupation they desired that their children should take up. Accordingly

the respondents of both the villages were asked to express their opinion in this regard, but seaparately for sons and daughters. This was done, keeping in view the 'purdah system' which generally prevails among muslims and stops the women folk to take up any job. The responses were subjected to simple percentage and are given in the following table:

Table 69

Percentage Distribution of Occupational Aspirations for their sons at Different Levels of Adoption

Occupation / Village	Doctor	Engineer	Lawyer	Teacher or Lecturer	Agriculture	Any Govt. Service	Business	Do Not say
A	21.00	15.00	10.00	20.00	9.00	9.00	9.00	7.00
B	3.00	1.00	5.00	35.00	20.00	20.00	10.00	6.00

The Table reveals that in Village A, the medical profession (21%) had the largest option, followed by teaching (20%), engineering (15%) and lawyers (10%). Government service, agriculture and business had the same percentage (9%). Compared to this in Village B, teaching had the largest option (35%) followed by those respondents who want to keep their

sons either in agriculture or government service (20% each). 10% respondents were interested in business for their sons, 5% desired their sons to be lawyers, and 3% wanted their sons to be doctors. There is only one percent of respondents who preferred engineering.

Regarding the occupational aspirations for their daughters, the table 70 shows that in Village A, the majority of the respondents (about 35%),

Table 70

Percentage Distribution of Occupational Aspirations for their Daughters

Occupation / Village	House-hold	Handi-craft	Doctors	Teachers	Do not say
A	35.00	20.00	3.00	18.00	24.00
B	46.00	15.00	1.00	3.00	35.00

were in favour of keeping their daughters in the house-hold job and did not like to send them out. 20% respondents wanted their daughters to be engaged in handicrafts, followed by 18% of who desired their daughters to go for teachers job. 24% of respondents do not have any idea of the profession or they seem to be indifferent in this regard.

In Village B, 46% respondents were interested to have their daughters in the household, even after some preliminary education, 15% gave their option for handicrafts, 3% percent for teaching, 1% for doctors and there are 35% of respondents who didn't have any idea of the profession they want for their daughters.

On the whole, the respondents of both the villages were generally clear about the profession they wanted their sons to take up. But in case of daughters, they either seem to be reluctant or they want them to take professions like handicrafts in which they need not go out. This reluctancy is because of the 'purdah system' prevalent among the Muslims. However, still we find that change in attitude has been initiated, more in Village A and it will take still more time to take a better shape.

With a view to go in further details, the respondents were asked to express their opinion with regard to preference for the school for their children. Here again, the opinion was sorted out separately for sons and daughters. As far as sons are concerned, it is obvious that there is a shift in the farmers

Table 71

Percentage Distribution of Opinions about Schooling of their Sons

Preference for School	Village A	Village B
Rural	20.00	43.00
Urban	49.00	39.00
English Medium	28.00	12.00
Can't Say	3.00	6.00

attitude towards schooling of their children, as in Village A, compared to 20% who are still interested to have their children's educated in rural schools, there are 49% of respondents who prefer to send their sons out in urban schools and 28% prefer English medium school (Table 71). This shows their changing trend towards better education. There are only 3% of respondents who don't have any opinion on this.

In village B, although the intensity is low. There are 43% of respondents who show no change in their attitude whereas 39% favour urban schooling and 12% English medium. There are 6% of respondents who don't have any opinion.

As far as the schooling of their daughters is concerned, the trend is not encouraging as shown in the following table:

Table 72

Percentage Distribution of Opinions about Schooling of their daughters

Preference for School	Village A	Village B
Rural	58.00	63.00
Urban	15.00	8.00
English Medium	4.00	-
Can't say	23.00	29.00

Coming to the preference of respondents for schools for their daughters it was found that they have not changed their mind much. 58% of the respondents of Village A still do not want to send their daughters outside the village for schooling. There are 15% and 4% respondents who prefer to send them in urban and English medium schools respectively.

In Village B, there are 63% of respondents who still think that girls should not be sent outside the village for schooling. 8% of respondents expressed their opinion for urban schooling. There

is not a single respondent who stands for English medium school.

On the whole, it can be said that adoption of agricultural innovations and its consequent economic uplift has affected the way in which farmers were aspiring for education to their children. It is bringing about a change in their attitude towards their children's education. They are now giving importance to children's education, as they realise it. However, this changing trend in their attitude is not equally encouraging in case of girls, where the farmers still seem to be reluctant to change. This is due to the reason as to relative importance attached to the movement of girls and 'purdah system' prevalent among Muslims.

Other Aspects

Some sociological investigations have revealed that people are becoming increasingly aware of the fact that additions to the family can be checked by voluntary means, and necessary appliances are available free of charge. In some cases, the responses have been encouraging while in others they have been insignificant and poor. It was desired to know how far this aspect has crept into the village life. In the analysis of the present study, it

included two types of questions, firstly relating to their opinion on, 'Whether they think that according to the present conditions of our society, it is necessary for a person to adopt family planning measures and secondly whether they have adopted any measure or not. Both the responses were tabulated in the first instance in relation to low and high adoption level, for each village and then put to Chi-square test to find out the significance of their association.

Table 73

Percentage Distribution of Attitude Towards Family Planning Measures at Different Levels of Adoption

Adoption Level	Village A (Percentage) N=99		Village B (Percentage) N=93	
	No	Yes	No	Yes
Low (0-3)	23.07	10.98	43.38	22.58
High (4-6)	4.04	24.64	2.15	26.88

The responses revealed that in Village A 23.07 % respondents under low level adoption and 4.04% respondents under high level adoption do not think the family planning measures necessary whereas

64.64% respondents under high adoption were of the view that family planning measures are necessary under the present condition of society. As compared to this in Village B, there are 43.38% and 2.15% under low and high level of adoption who do not think family planning measures as necessary. As against this 22.58% and 26.88% under low and high level of adoption respectively were of the opinion that family planning measures are necessary. Thus, as the adoption level of farmers increase, their attitude is also subjected to change. Although the trend is not so clear in Village B as in Village A, this again can be attributed to the higher degree of exposition to modern ideas in Village A than Village B. The Chi-square value worked out for each village (Table 74) also stresses that the

Table 74

Village	Chi-square value
A	43.41*
B	21.28*

* Significant at .01 level

adoption level of farmer is strongly associated with the change in attitude towards family planning.

As far as the adoption of family planning measures are concerned, the response was not encouraging (Table 75): as majority of the respondents although

Table 75

Percentage Distribution Adoption of Family Planning Measures at Different Levels of Adoption.

Adoption Level	Village A (Percentage) N=96		Village B (Percentage) N=93	
	No	Yes	No	Yes
Low (0-3)	20.83	11.46	69.89	5.37
High (4-6)	57.29	10.42	21.51	3.23

having a positive attitude have not adopted family planning measures in both the villages. There are 20.83% and 57.29% of respondents in Village A under low and high adoption level respectively who have not adopted any family planning measures, compared to 11.46% and 10.42% under low and high level of adoption respectively who have gone for family planning measures. In Village B, there are 69.89% and 21.51% respondents under the low and high level of adoption respectively who have not adopted family

planning measure while as 5.37% and 3.23% respondents under low and high level of adoption respectively who have adopted family planning measures.

The Chi-square test (Table 76) reveals that

Table 76

Village	Chi-square value
A	3.89 *
B	0.76 **

* Significant at .05 level

** Not significant.

in Village A association is significant at .05 level of probability whereas in Village B, it is insignificant. The reason seems to be that although they had positive attitude towards family planning but at the same time they felt that it is not advisable by religion, which makes them reluctant to go for family planning measures.

Broadly, there is a positive change in their attitude towards measures like family planning which goes along with the adoption level, but to make this change practical by adopting measures for family planning may take sometime.

The overall analysis of this section brings to limelight that adoption of agricultural innovations have changed their attitude towards social and other institutions. The adoption of agricultural innovations has also brought changes in attitude towards religosity, attitude towards family and marriage institutions. At the same time their educational aspirations for their children have increased along with adoption level. The attitude towards their children, taking up traditional occupations have changed to modern occupation, although it is not with the same degree in case of daughters. They have developed positive attitude towards family planning measures, although it is not equally reflected by the adoption of family planning measures due to some inherent reasons.

In short, increased agricultural prosperity brought by adoption of modern technology has made noticeable impact on the social life of farmers, their attitudes and aspirations.

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CHAPTER XII

SUMMARY AND CONCLUSIONS

To change the traditional outlook of the rural masses and to fashion their life in a better way, the development of agriculture becomes inevitable. As India at large and the State of Jammu and Kashmir in particular is predominantly agricultural in their economy, the development is not possible without improving the condition of agriculture in the rural areas. Realization of this fact, after Independence, compelled the government to take conscious steps to revitalize this sector through planned development. It was well understood that to gear up the entire production process in the village, the technological transformation in the field of agriculture is a must.

In the field of agriculture, important technology includes use of chemical fertilizer, improved seeds, kinds of material used for protection of crops against pest and diseases, and design of mechanical equipment.

Technological change is not, as many people think, merely a means of increasing production and reducing cost or labour. It also raises

not only complex technical and economic problems, but also social, psychological and cultural issues of deep importance. Moreover, it also affects the economic superstructure or occupational pattern, on the one hand and on the other class structure and and relationships, social institutions, the family, system of education, modes of recreation, 'belief system' values, philosophy of life, have direct or indirect impact of technological change.

Therefore any agricultural innovation that is recommended must be considered not only in terms of its expected productivity but also in terms of its consequent implications on various social aspects of farmers life.

The dearth of studies, which could have taken primary cognizance of social effects of agricultural technology pressed the demand to study the adoption and diffusion of agricultural technology in relation to its social implications. This need was most felt for the State of Jammu and Kashmir, which is so far devoid of such type of studies.

Thus the present study on 'Social implications of technological changes in Rural Kashmir' was accomplished to achieve the following objectives:

i) To find out the socio-economic background of the rural people and to ascertain its association with other variables, if any.

ii) The extent to which rural people adopted the new techniques of agriculture.

iii) To find out the causes that lead rural people to adopt these techniques and to identify the barriers to adoption.

iv) To find out the important channels of communication for adoption of new agricultural techniques.

v) To find out the role of change agents in relation to adoption.

vi) To determine the impact of adoption of new agricultural techniques on the social institutions and on the behaviour of the people.

On the basis of the above objectives, following general hypothesis was framed:

"Greater the dissemination of technology, higher the scope for social change and vice-versa."

The coverage of the present study was limited to two villages, one progressive and the other non-progressive in Larikpora block of Anantnag district of Kashmir valley. Multi-stage purposive random sampling technique was used to select the sample for this study.

Since the main focus of the study was to understand the impact of agro-technological changes, it was considered essential to select such respondents who are directly or indirectly associated with farming. Bearing this in mind 100 families from each village were selected by simple random sampling and functional heads of the family were treated as respondents.

Census, official and non-official records were consulted for secondary source of data collection and comprehensive interview schedule was designed to collect the primarydata, on which the present study is mainly based upon.

Percentages, averages, Chi-square test and co-efficient of correlations were used as statistical measures.

SUMMARY OF THE FINDINGS:

In this study in order to understand the extent of adoption of modern technologies in agriculture, five important practices have been selected. These are: Adoption of improved farm implements, use of chemical fertilizer, use of insecticides and pesticides, improved variety of seeds, and possession of improved live-stock.

The study reveals that the farmers of the two villages were at different stages of knowledge, attitude and adoption of improved practices. The Village A (denoted as progressive village) ranks higher than Village B (denoted as non-progressive village) in respect of adoption of improved practices. Although in case of certain practices viz. chemical fertilizer, the variation gap is not so wide, due to the reliance placed on its use, the overall analysis has brought into sharp focus a wide gap in the level of adoption between the two villages, which facilitated the comparison between the adoption and non-adoption and their consequences on the social aspects of village life.

In order to know the association of socio-economic factors with adoption of modern agricultural technology, factors selected are: age, educational level, income, extent of land holding, occupation and family type.

Age of the respondents was found negatively correlated with adoption. Young farmers are credited with higher adoption score than medium age or old age group. There is a strong positive correlation between the education level of the farmer and adoption of improved practices. Adoption score goes up as the income level increases in both the villages. There is a strong and positive co-relation between the size of holding and adoption. The large size holders seems to be in a better position to go for more improved practices which is quite natural.

It is interesting to note that the farmers who combine farming with services are credited with higher adoption score. In contrast, exclusive farmers rank low in adoption score in both the villages. It is also noticed that

nucleur families are comparatively more inclined to adoption than extended/joint family, although the association is not established in Village A, but it is significant for Village B.

Apart from the above factors, change from traditional occupation and shift in cropping patterns were also examined. It was found that those who are no longer clinged to traditional occupations occupy higher average adoption score, than those who have not made any shift. Similarly, those who go for double cropping are credited with high adoption score.

The overall picture reveals on one hand, the strong association or correlation of socio-economic factors with adoption and on the other, the difference between the progressive and non-progressive village in their levels of adoption.

Apart from socio-economic factors, the adoption of improved practices to a large extent depends upon those factors which are either connected with innovation itself or the situation in which farmer is placed. Accordingly the factors which serve as accelerators or barriers were studied for each practice.

The study reveals that convenience and practical utility in Village A and economic factors in Village B are the major factors which accelerate the rate of adoption of improved implements whereas unfavourable geographical conditions and small holdings stand as main barriers to such adoption in both villages.

High yield appears to be another important factor which accelerates the rate of adoption of fertilizer, insecticides and pesticides; and improved seeds, whereas scarcity and high price, complexity and disqualifications of very innovation serve as the main barriers to the adoption of chemical fertilizers, insecticides and pesticides, and improved seeds respectively, except in case of improved seeds where disinterest and lack of knowledge act as main barrier to adoption in Village B.

The desire to have better quality of live-stock in Village A followed by strong persuation in Village B were the motives. Unfavourable geographical conditions followed by technical difficulties in Village A, and disinterest followed by unfavourable geographical conditions in Village B stands as the main barrier to the adoption of improved live-stock.

In the present study the source of information was conceptualized as source through which farmers get information about the agricultural innovations. They were categorised as: personal localite, personal cosmopolite and mass media. The study in its aggregate value of all the three, reveals that mass media is the major source of information followed by personal cosmopolite and personal localite.

The process by which an individual is exposed to the outside world apart from his own community and the degree of media exposure leads to wider area of human activity as well as increase in knowledge and widening of horizons. In the present study the degree of mobility was measured in terms of their monthly visits outside the village, yearly visits outside the state, monthly visits to nearest city and interaction with the people outside the village. The media exposure was measured in terms of their exposure to newspaper, radio, television and movies. Both the variables were studied in relation to the adoption.

It has been established that both, mobility and media exposure are positively correlated with the adoption behaviour of the farmers. It further reveals that farmers of village A comparatively have high degree of perception than Village B regarding the programmes broadcasted or telecasted for agricultural development and it has great bearing on their adoption behaviour.

Change agents whether official or non-officials are held to play an important role in any programme of planned Change. Thus it seems logical that in farm communities, they will also promote the adoption of agricultural innovations. In this study farmers knowledge and degree of contact with officials and non-officials, involved at different levels of development administration, was studied in relation to their adoption behaviour.

It is obvious from the study that degree of knowledge and contact with officials and non-officials has a positive bearing on the adoption behaviour of farmers. The study further shows that agriculture matters were the main concern of contact in Village A while in Village B, personal matters,

were the main concern. Further the result of contact was largely helpful in Village A, and uncertain in Village B.

The rapid technological development in agriculture and the subsequent adoption of modern agricultural technologies tend to revolutionize the economic and social life of farmers. The adoption of agricultural innovations brings about changes in both technological and non-technological aspects of social life. Due to the importance of attached to the social institutions, the impact of technological changes upon rural social institutions attains a great significance in studies of rural social change. The present study concerned itself with the changes taking place in social institutions as a result of adoption of modern agricultural technologies. The main concern was to examine the changes in the attitude of farmers towards the major social institutions such as, religion, family, marriage, education and some related aspects.

Religiosity and adoption behaviour of farmers were found to be negatively co-related. In other words higher the adoption, lesser the religiosity in the farmers. Moreover, the high level adopters had favourable attitudes towards nuclear family than joint family. The adoption of agricultural innovations has also brought change in attitude towards various aspects of marriage institution e.g. distance of marriage, decision about selection of spouse etc. The change in attitude in this regard is found to be positively correlated with adoption level of farmers.

Educational aspirations for their children goes along with the adoption level of the farmers. Higher the adoption score, higher will the educational aspirations. At the same time, the occupational aspirations for their children shows a shift in attitude from traditional to modern occupations. The farmers have developed a positive attitude towards family planning measures, although it is not equally reflected by the adoption of family planning measures.

Thus increased agricultural prosperity brought about by the adoption of modern agricultural technology has made a remarkable impact on the social life of farmers, their attitudes and aspirations.

CONCLUSION

It is evident from the socio-economic tables given at Appendix I that the two villages vary in their socio-economic background. The functional heads who were our respondents fall generally under middle age group followed by the young in progressive Village A. In case of the non-progressive village, majority of them belong to old age group followed by middle age group. The majority of respondents in progressive Village A are high school or graduate. As against this in the non-progressive village largest number of respondents were illiterate and only the next higher number was those of with some formal education. Regarding the income level, it is higher in the progressive Village A than that of the non-progressive Village B. The land holding size is also comparatively higher in Village A,

compared to non-progressive Village B, except at one level, where non-progressive village leads. This can be attributed to the prevalence of joint family system in non-progressive village. Another noteworthy feature of the progressive village is that majority of the farmers have combined farm with service. But the case of non-progressive village is quite different as here majority are exclusive farmers. In progressive village nuclear family type is prevalent as against joint or extended in non-progressive village.

The empirical evidence of this study shows that the adoption of five practices, viz. improved implements, use of chemical fertilizer, insecticides and pesticides, improved seeds, and improved livestock is more and is increasing at a higher rate in the progressive village A than that of the non-progressive Village B.

It is also clear that socio-economic factors are strongly co-related or association with the adoption level. The progressive village is having higher level of adoption at all levels of

analysis compared to non-progressive village. Convenience and practical utility have been enlisted as the main factors in accelerating the adoption of improved implements in Village A. In case of Village B it is the economic factors which are considered to be of great importance. In both the villages unfavourable geographical conditions and small holding are common barriers to such adoption. Again, high yield accelerates the adoption of fertilizer, agro-chemicals and improved seeds in both the villages, while as scarcity, high price, complexity, disqualifications of the very innovation are the main hindrances to such adoption respectively. But in case of some of these practices, in Village B, disinterest and lack of knowledge are main barriers to adoption. Desire for better quality and strong persuasion accelerates the adoption of improved livestock in Villages A and B respectively. It has also been noticed that in Village A, mass media and in Village B personal localite function as main source of information.

The mobility and media exposure is found to be positively co-related with the adoption behaviour of farmers in both the villages, with comparatively higher degree of perception regarding agricultural programmes by farmers of Village A than Village B. It is also obvious from the study that the degree of knowledge and contact with officials and non-officials has a positive bearing on the adoption behaviour of farmers.

It is also obvious from the study that degree of religiosity, attitude towards nuclear family, change in attitude towards various aspects of marriage institutions, higher educational aspirations, attitude towards family planning all are significantly correlated with the adoption level of farmers.

Thus, the adoption level can be easily correlated with the socio-economic co-relates on one side and changing aspects of social life of farmers on the other. There can also be co-relation between the socio-economic co-relates and changing aspects of social life. Similarly,

mobility and media exposure are co-related to adoption level, it can also have bearing on the socio-economic co-relates. It is worthwhile to point out at this stage that besides the correlations between different variables there can also exist inter-variable correlation which was kept outside the purview of the present study. These assumptions were put forth in the model given in the theoretical orientation chapter. In order to validate these types of relationship, co-efficient of co-relation test was applied to the remaining variables. The results were worked out and presented in Table 77:

Table 77

Co-efficient of Correlation for Variables

Pairs Co-rrelated	Co-efficient of Correlation value	
	Village A	Village B
Age and Religiosity	.123*	.182*
Education and Religiosity	-.671***	.198**
Income and Religiosity	-.312***	.201 **
Land Holding and Religiosity	-.12*	.136*
Age and Marriage Attitude	-.395*	-.660***
Education and Marriage Attitude	.628 ***	.530***

Pairs Co-rrelated	Co-efficient of Correlation Value	
	Village A	Village B
Income and Marriage Attitude	.266**	.393***
Land Holding and Marriage Attitude	.006*	-.029*
Age and Attitude Towards Family Type	-.301***	-.213**
Education and Attitude Towards Family Type	.621***	.199**
Income and Attitude Towards Family Type	.182*	.201**
Land Holding and Attitude Towards Family Type	-.412***	-.313**
Age and Educational Aspirations	-.289***	-.355***
Education and Educational Aspirations	.689***	.574***
Income and Educational Aspirations	.984***	.518***
Land Holding and Educational Aspirations	.144***	.308***
Age and Mobility	-.693***	-.502***
Education and Mobility	.602***	.677***
Income and Mobility	.326***	.198**
Land Holding and Mobility	.001*	-.012*
Age and Media Exposure	-.298***	-.450***
Education and Media Exposure	.668***	.907***
Income and Media Exposure	.907***	.602***
Land Holding and Media Exposure	-.249**	-.199**

* Not Significant
** Significant at .05 level
*** Significant at .01 level.

As the Table shows, majority of the socio-economic factors are significantly correlated with the selected social change variables as religiosity, marriage, educational and family. Moreover, it also exhibits that mobility and media exposure is also well correlated with social change variables.

On the basis of the foregoing analysis it can be safely concluded that adoption level, socio-economic factors and change in social aspects are inter-related. It is also established that mobility and media-exposure are correlated to adoption level as well as to socio-economic correlates. This proves our conceived model. Thus starting right from the exposure to technology, through the acceptance, its adoption and social implications, it was ultimately found that 'greater the dissemination of technology, higher the scope for social change and vice-versa.'

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APPENDIX - I

SOCIO ECONOMIC TABLES

Table 1

(Age Group)

Age Group	Percentage Distribution	
	Village A	Village B
Upto 35 years	37.00	22.00
36 - 50	51.00	28.00
51 & above	12.00	50.00
Total	100.00	100.00

Table 2

(Educational Level)

Educational Level	Percentage Distribution	
	Village A	Village B
Illiterate	17.00	53.00
Can read and write	13.00	23.00
High School	35.00	18.00
Graduate and above	35.00	6.00
TOTAL	100.00	100.00

Table 3

(income group)

Income Group - monthly (in Rupees)	Percentage Distribution	
	Village A	Village B
Upto - 150	5.00	-
151 - 300	7.00	27.00
301 - 450	17.00	36.00
451 - 600	43.00	28.00
601 - 750	24.00	9.00
751 - 1900	2.00	-
TOTAL:	100.00	100.00

Table 4

(Land Holding)

Land holding in Canals*	Percentage Distribution	
	Village A	Village B
Upto 5	5.00	1.00
5 - 10	21.00	32.00
10 - 20	42.00	17.00
20 - 30	22.00	40.00
30 - 40	6.00	5.00
40 - 50	4.00	5.00
TOTAL:	100-00	100.00

* 1 acre = 8 canals.

Table 5

(Occupation)

Occupation	Percentage Distribution	
	Village A	Village B
Exclusive Farmers	14.00	35.00
Farm & Business	19.00	24.00
Farm & Service	51.00	24.00
Farm & Artisan	8.00	11.00
Farm & Labour	8.00	6.00
TOTAL:	100.00	100.00

Table 6

(Family Type)

Family Type	Percentage Distribution	
	Village A	Village B
Nuclear	61.00	21.00
Joint/Extended	39.00	79.00
TOTAL:	100.00	100.00

Table 7

(Change from traditional Occupation)

Item	Percentage Distribution	
	Village A	Village B
Yes	73.00	49.0
No	27.00	51.00
TOTAL:	100.00	100.00

Table 8

(Cropping Pattern)

Cropping Pattern	Percentage Distribution	
	Village A	Village B
Single	13.00	48.00
Double	87.00	52.00
TOTAL:	100.00	100.00

APPENDIX - II

SCHEDULE

Part A

PERSONAL AND FAMILY PARTICULARS

1. Name and address of the Respondent

2. Sex : Male / Female

3. Marital Status : 1. Un-married 2. Married
   3. Divorced

4. Age Grouping (Circle one):

   (1) Upto 25 (2) 25 - 30 (3) 30 - 35
   (4) 35 - 40 (5) 40 -45 (6) 45 - 50
   (7) 50 - 55 (8) 55 - above (9) DN / NK

5. Religion

   (1) Muslim (2) Hindu (3) Sikh
   (4) Christian (5) Jain (6) Others - (Specify)

6. Place of residence: (1) Rural (2) Urban

7. Education of the respondent:

   1. Literate
   2. Illiterate

8. If literate:

   (1) Primary (2) High School
   (3) Graduate Level
   (4) Post-Graduate and above
   (5) Professional

9. Income grouping (Monthly)

(1) Upto 150	(2) 151 - 300
(3) 301 - 450	(4) 451 - 600
(5) 601 - 750	(6) 751 - 900
(7) 901 - 1000	(8) 1001 & above.

10. Total land holding (Canals):

(1) 0- 5	(2) 5 - 10	(3) 10 - 20
(4) 20 - 30	(5) 30 - 40	(6) 40 - 50
(7) 50 - 60	(8) 60 - 70	(9) 70 - 80
(10) 80 - 90	(11) 90 - 100	(12) 100- above.

11. Occupation:

Occupation	Main/Subsidiary
1. Agriculture	
2. Artisans	
3. Labourer	
4. Trade & Business	
5. Service	
6. Any other (Specify)	

12. What was your father's occupation (for investigator to note the change, if any):

13. Family size:

Name	Relation to you	Age	Sex: Male	Sex: Female

1. Nuclear
2. Joint/Extended (for investigator)

14. What crops generally you grow in your field?

Agriculture: Rabi	Agriculture: Kharif	Horticulture

Part B

ADOPTION OF IMPROVED PRACTICES AND METHODS

Knowledge, Attitude & Practice

15. Do you know the following improved agricultural practices?

Item	Yes	DN/NK	No
1. Use of high yielding varieties of seeds			
2. Use of chemical fertilizer			
3. Use of modern agri. practices			
4. Use of agro-chemicals			
5. Improved Livestock			

16. What do you feel about these practices, I mean to what extent these are useful and beneficial to you?

Item	Useful	DN/NK	Not useful
1. Use of high yielding varieties			
2. Use of chemical fertilizers			
3. Use of modern agricultural practice			
4. Use of agro-chemicals			
5. Improved livestock			

17. Do you adopt these practices to improve your farming?

Item	Yes	DN/NK	No
1. Use of high yielding varieties of seeds			
2. Use of chemical fertilizer			
3. Use of modern agri. practices			
4. Use of agro-chemicals			
5. Improved Livestock			

18. Do you use the following implements in the cultivation of your field?

Item	Yes	No
1. Tractor		
2. Shalimar Plough		
3. Modern Plough		
4. Any other		

19. If yes, what are the reasons for using it?

1.
2.
3.

20. If No, why do you not use it? (Probe)

1.
2.
3.
4.
5.
6.

21. How did you come to know about it?

(1) Friends (2) Neighbours
(3) Relatives (4) V.L.W.
(5) Block (6) Mass Media
(7) Any Other

22. Do you use chemical fertilizers to boost up the yield?

(1) Yes (2) No

23. What do you gain by using it?

(1)
(2)
(3)

24. If no, why do you not use it? (Probe)

(1)
(2)
(3)
(4)
(5)
(6)

25. How did you come to know about it?

(1) Friends (2) Neighbours
(3) Relatives (4) V.L.W.
(5) Block (6) Mass Media
(7) Any other

26. Do you use pesticides and insecticides to safeguard the plants from diseases?

(1) Yes (2) No. (3) Not applicable.

27. What do you gain by using it?

(1)
(2)
(3)

28. If no, what difficulty do you face? (Probe)

(1) (2)
(3) (4)
(5) (6)

29. How did you come to know about it?

(1) Friends (2) Neighbours
(3) Relatives (4) V.L.W.
(5) Block (6) Mass Media
(7) Any other

30. Do you use better seeds such as 1039 paddy and others to improve the yield?

(1) Yes (2) No

31. If yes, what do you gain?

(1) (2)
(3)

32. If no, what are the reasons?

(1) (2)
(3)

33. What type of livestock you rear?

Item	New breed	0.Indigenous
1. Cows		
2. Sheep		
3. Goats		
4. Bullocks		
5. Poultry		
6. Any other		

34. If indigenous, why?

(1) (2)

(3)

35. If improved breed, why?

(1) (2)

(3)

36. How did you come to know or why inspired you?

(1) Friends (2) Neighbours

(3) Relatives (4) V.L.W.

(5) Block (6) Mass Media

(7) Any other

Part C

MOBILITY AND MEDIA EXPOSURE

37. How many times do you go out of your village in a month?

(1) Never (2) Once (3) Twice

(4) Frequently (5) Not mentioned.

38. How many times you go out of your State in a year?

(1) Never (2) Once (3) Twice

(4) Frequently (5) Not mentioned.

39. How many times do you go to the nearest city in a month?

(1) Never (2) Once (3) Twice

(4) Frequently (5) Not mentioned.

40. How often do you read newspaper/books/others (if literate)?

(1) Do not read
(2) Once a week
(3) Less than a week
(4) Several days a week
(5) Daily
(9) Not mentioned.

41. How often do you go to movies?

0. Never
1. Once a month
2. Once in a fortnight
3. Once a week
4. Frequently
9. Not mentioned.

42. (i) How often do you see television?

0. Never
1. Once a month
2. Once a week
3. Twice a week
4. Almost daily
9. Not mentioned

(ii) If respondent sees television, what kind of programmes you listen to? (List out the programmes according to respondent's preference):

1.
2.
3.
4.

43. i) Do you listen to the radio?

0. Don't listen
1. Less than one day in a week
2. One day a week
3. Two or three days a week
4. Almost daily
9. Not mentioned

(ii) What kind of programmes you listen to? (List out the programmes according to respondent's preference)

1.

2.

3.

4.

5.

42. Do you know of the programmes for the farmers on the radio/television?

0. No

1. Yes

you listen to these programmes?

0. No

1. Yes

43. Are these programmes useful?

0. No

1. Yes

44. If yes, in what ways?

1.

2.

3.

4.

Part D

OFFICIAL AND NON-OFFICIAL CONTACT

47.

Officials (Designation)	Awareness	Contacts	Purpose of the contact	Result of the Contact
	0. Don't know	0. Never		
	1. Heard of his designation	1. Occasionally		1. Can't s
	2. Heard of his name and designation	2. Quite often		2. Not helpful
	3. Know him both by name and designation			3. Helpful

1. OFFICIALS

1. Block Dev. Officer
2. Extension Officer (Agriculture)
3. Extension Officer (Co-operation)
4. Extension Officer (Education)
5. Extension Officer (Animal husbandry)
6. District Panchayat Officer
7. V.L.W.
8. Doctor (Health service)
9. District Agricultural Officer
10. Any other

2. NON-OFFICIALS

1. Sarpanch
2. Cooperative Society President
3. M.L.A.
4. M.P.
5. Any other

TOTAL SCORE

Part E

IMPACT

1. Religiousity

48. How important is 'religion' in your daily life?

1. Very important
2. Important
3. Important to some extent
4. Least important
9. Not mentioned.

49. How much are you guided by religion in the ordinary business of your life?

1. Very much guided
2. Guided
3. Guided to some extent
4. Least guided
9. Not mentioned

50. How often do you go to the place of your worship?

1. Five times a day
2. Three times a day
3. Once a day
4. Once a week
5. Twice a year
9. Not mentioned

51. How often do you go to shrines?

1. Twice a day
2. Once a day
3. Once a week
4. Once a year
9. Not mentioned

Social Institutions

II. Family

52. Which of the following things do you prefer about the family life of a person like you?

1. It is better to live separately with wife and children
0. It is better to live along with other relatives.
1. It is better that all adult members should be responsible for their expenditure
0. It is better that all adult members should be jointly responsible for the expenditure of the family and every member should contribute to the family income.

III. Marriage

53. Would you prefer to marry yourself/your son/daughter within the village or do you allow to have matrimonial alliance outside the village or district?

1. Within the village

2. Outside the village
3. Outside the district/state
9. DN / NK

64. Who would select life partners for yourself/your son/daughter?

1. Parents
2. Parents in consultation with person concerned
3. Person concerned
9. DN / NK

IV. Education

65. What do you think about the education of your children? Do you prefer to educate them?

	Yes	No	Undecided
Sons			
Daughters			

66. What are your educational and occupational plans for your sons/daughters?

	Education	Occupation
Sons		
Daughters		

67. Which school do you want to admit them?

	Rural	Urban	English Medium	N.A. / N.K.
Sons				
Daughters				

58. How long have you been married? (If married)

(1) 0.2 years (2) 2-4 (3) 4-6 (4) 6-10
(5) 10 - 14 (6) 14-18 (7) 18-22 (8) 22-above
(9) NA/NK

59. How many children you have at present?

(1) 1 - 2 (2) 2 - 4 (3) 4 - 6
(4) 6 - 8 (5) 8-above (6) NA/NK

60. Should men, women or both have the right to decide the size of the family?

(1) Men (2) Women (3) Both (9) NA / NK

61. In present conditions of our society is it necessary for a man like you to practice birth control?

(1) Yes (2) No (9) NA / NK

62. What do you think about yourself? Have you adopted any family planning device to check the birth rate?

(1) Yes (0) No (9) NA / NK

63. Dressing pattern of respondent (for investigator):

(1) Modern (2) Traditional

64. Condition of the house:

Item	Furnished	Unfurnished	Electricity	Water running	Any Other
Yes					
No					